



Arlington Conservation Commission

Date: Thursday, August 20, 2020
Time: 7:30 PM
Location: Conducted by Remote Participation

Agenda

1. Administrative

- a. In accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, the August 20, 2020 public meeting of the Arlington Conservation Commission shall be physically closed to the public to avoid group congregation. The meeting shall instead be held virtually using Zoom.

Topic: Conservation Commission Meeting
Time: August 20, 2020 07:30 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://zoom.us/j/94437616233>

Meeting ID: 944 3761 6233

Password: 503692

Call-in: +1 301 715 8592

+1 312 626 6799

Meeting number: 944 376 16233#

Members of the public are strongly encouraged to send written comment regarding any of the hearings listed below to Conservation Agent Emily Sullivan at esullivan@town.arlington.ma.us.

Please read Governor Baker's Executive Order Suspending Certain Provision of Open Meeting Law for more information regarding virtual public hearings and meetings: <https://www.mass.gov/doc/open-meeting-law-order-march-12-2020/download>

- b. Review draft 07/23/2020 minutes.
- c. Review draft 08/06/2020 minutes.
- d. Discuss English Ivy infestation along the Spy Pond Route 2 pathway
- e. Review the roles and responsibilities of the Commission Chair and Vice Chair

2. Discussion

- a. DPW Renovation Working Session

This project proposes a new/renovated Municipal Facility to support the DPW, ISD, Facilities, and IT departments at 51 Grove Street. The proposed site includes the current 4.4-acre parcel, used by

DPW / ISD, and an adjacent 1.4-acre portion of Town-owned land for a total of 5.8 acres. Sections of the site are within the 100-ft Wetlands Buffer, AURA, and 200-ft Riverfront Area of Mill Brook, as well as floodway and floodplain.

The work includes demolition of the existing ancillary salt/sand storage structures and fueling system, renovation of the four existing structures (Buildings A, B, C, and D), construction of a new 2-story 43,000 square-foot operations building, construction of a new salt storage structure, construction of a new state-of-the-art fueling system, and overall site improvements.

Overall, the new facility includes numerous significant improvements to both the site and operations, including:

- improved stormwater and runoff management
- improved storage of vehicles, equipment and materials (indoor vs. outdoor)
- improved storage and handling of liquid petroleum products
- improved vehicle washing operations

b. Regulations Update: Section 33 Stormwater Management

3. Hearings

Request for Determination of Applicability: 22 Lawrence Lane

Request for Determination of Applicability: 22 Lawrence Lane
Arlington File #A20.3

The project proposes to build a new deck and renovate an existing patio within the 100-ft Wetlands Buffer and AURA of an isolated wetland. The proposed project will reduce the amount of impervious surface by 231 square feet.

Request for Certificate of Compliance: Spy Pond Edge and Erosion Control Project

Request for Certificate of Compliance: Spy Pond Edge and Erosion Control Project
MassDEP File #091-0299

The project as approved proposed shoreline stabilization and ecological restoration activities on the Town-owned properties located at Spy Pond Park, Scannell Field, and area west of the Boys and Girls Club in the 100-ft wetlands buffer and AURA of Spy Pond. The project was approved on 09/05/2018.



Town of Arlington, Massachusetts

Review draft 07/23/2020 minutes

Summary:

Review draft 07/23/2020 minutes.

ATTACHMENTS:

| | Type | File Name | Description |
|---|---------------------------|--|--------------------------|
| ▢ | Meeting Minute (draft) | 07232020_Minutes_Conservation_Commission.pdf | Draft 07/23/2020 minutes |



Arlington Conservation Commission

Date: July 23, 2020

Time: 7:30pm

Location: Conducted through Remote Participation using Zoom

Minutes

Attendance: Commission Members Susan Chapnick (Chair), Pam Heidell, Dave Kaplan, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioners Cathy Garnett and Mike Gildesgame; and Conservation Agent Emily Sullivan. Members of the public included Theresa Stremlau, Ted Braveman, Jaycee Do, Ellen Cohen, James Word, Brendan Horigan, Virginia Boutchia, Dan Wells, Mary O'Connor, Daniel St. Clair, Kyle Zick, and Julia Mirak Kew.

47 Spy Pond Lane Restrictive Covenant

The Commission discussed edits to the draft restrictive covenant for 47 Spy Pond Lane. The restrictive covenant is for both Lots 1 and 2, and ensures that the porous driveways and walkways outside of ~~conservation~~ Conservation Commission jurisdiction are porous in perpetuity. The restrictive covenant is required per the Orders of Condition for MassDEP File #091-0317 and #091-0318. N. Stevens motioned to approve the restrictive covenant as edited, D. White seconded, all were in favor, motion approved.

Deliberation: Notice of Intent: 869 Mass Avenue, Arlington High School MassDEP File #091-0323

Documents Reviewed:

- 1) Notice of Intent for work at Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants, Inc., dated 05/07/2020
- 2) Existing Conditions Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants, Inc., stamped by James P Horgan PLS#50302, dated 04/23/2020
- 3) Civil Engineering Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants, Inc., stamped by Stephen R Garvin PE#42772, dated 05/07/2020
- 4) Sports Fields Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and JJA Sports LLC, stamped by John J Amato PE#34799, dated 05/07/2020
- 5) Stormwater Report for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects, Crosby/Schlessinger/Smallridge

LLC, and Samiotes Consultants, Inc., stamped by Stephen R Garvin
PE#42772, dated 05/07/2020

6) Supplemental Materials submitted for the 06/04/2020 meeting

Resource Areas:

- 1) Mill Brook
- 2) 100-Foot Wetlands Buffer Zone
- 3) 100-Foot Adjacent Upland Resource Area
- 4) 200-Foot Riverfront Area
- 5) Bordering Land Subject to Flooding

The Commission reviewed the draft Order of Conditions for 869 Massachusetts Avenue and discussed edits to the draft. The Commission agreed to the following special conditions:

31. The Commission reserves the right to require an independent environmental monitor to monitor the project and report back to the Commission if it determines one is necessary at any time during the project's construction.
33. The Applicant has agreed to work with the Conservation Commission to find a location for the car washing fundraisers to minimize impacts of waste water on the water quality of the Town's water resources.
38. At least 21 days prior to construction, a written dust mitigation plan using water as a dust control shall be submitted to the Conservation Commission. This dust mitigation plan shall be implemented through the duration of the project.
43. The Applicant is permitted to use the cut-and-dab method for invasive plant management control in the east and west side planting areas. The Applicant shall hire a licensed herbicide applicator with at least 3 years of experience. The Applicant shall only use Massachusetts Department of Environmental Protection approved herbicides.
44. All plantings planted and invasive species removed through this project shall be monitored for three years. A survival rate of at least 80% must be maintained for the approved plantings at the end of the third monitoring year. If there is less than an 80% survival rate of the plantings after the third year, the Applicant must submit recommendations for replacements to the Conservation Agent for approval. A monitoring report shall be submitted annually in June for the three year monitoring period, reporting on the health of the new plantings and the success of the invasive plant management.
45. The Applicant shall notify the Conservation Agent when the invasive removal and planting work along Mill Brook is scheduled so that the Conservation Agent can monitor the work.
47. The Applicant shall install a "no mow" sign or demarcation along the 25-ft boundary within the 100-ft wetlands buffer and AURA. The "no mow" areas shall be maintained per the approved design. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.
50. All mitigation as proposed as part of this project shall remain in perpetuity. The approved planting areas, invasive removal areas, the rain garden, the water

quality units, and the stormwater system shall remain in perpetuity and if replacement is necessary, shall be subject to the approval of the Commission. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.

51. The Applicant shall submit an annual affirmation that a contract with a third party contractor for maintenance of the underground storage chambers and approved water quality units is in place. All other structural stormwater BMPs shall be maintained in accordance with the approved Operation and Maintenance plans. It is sufficient to email the Conservation Agent with a statement of affirmation, and the statement must be submitted by December 31 each year. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.
52. The Applicant shall submit copies of the SWPPP inspection reports to the Conservation Agent within 10 days of the date of each report.
53. The Applicant shall submit a snow storage plan to the Commission for review. No snow storage is permitted in the mitigation planting areas or within any resource areas. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.
54. The Applicant shall include one member of the Conservation Commission in any artificial turf field working group or group that is responsible for the oversight, management, disposal, and/or replacement of the proposed artificial turf fields. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.
55. When the proposed artificial turf field needs to be replaced, the Applicant shall file a new Notice of Intent to the Conservation Commission. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.
56. The Applicant is responsible for informing the Conservation Commission of any updated state or federal standards for artificial turf that relate to environmental impact, and water quality monitoring of stormwater or groundwater in a timely manner to the best of their knowledge. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.
57. The artificial turf specifications shall comply with the following standards, as outlined in Document #32 and subsequent Hearing discussions. A sample of the selected artificial turf shall be tested by an Environmental Laboratory Approval Program (ELAP)-accredited third-party independent laboratory to ensure compliance with the following performance standards. CAM 17 can be used for both turf fibers and infill materials. The referenced New York State Department of Environment and Conservation (NYSDEC) Part 375 is expected to be replaced by a future ASTM Standard Test that will be specific to turf fibers and backing materials. The referenced ASTM Standard Methods are specific to the materials included in their titles. The Massachusetts Department of Environmental

Protection (MassDEP) Massachusetts Contingency Plan (MCP) methods and standards are for soil since MassDEP does not have regulated standards for artificial turf materials. Proof of testing results shall be submitted to the Conservation Commission. This shall be a continuing condition that survives the expiration of this permit /Order and shall be included in any Certificate of Compliance as a continuing condition in perpetuity.

- I. Metals: CAM 17 (California Administrative Manual, Title 22): law intended to protect drinking water sources from heavy metals, includes testing and threshold requirements for 17 heavy metals of concern. Detected metals results for arsenic, mercury, antimony, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc shall not exceed the CAM 17 Soluble Threshold Limit Concentration (STLC) for each individual metal.
- II. Lead: The ASTM 2765 Standard Specification for Total Lead Content in Synthetic Turf Fibers: standard for testing fibers to comply with the Consumer Product Safety Improvement Act of 2008 for lead content. The current threshold is 100 mg/Kg total lead which complies to children's toy levels. Detected results for total lead in turf fibers and turf infill shall not exceed 100 mg/Kg.
- III. Metals: The ASTM 3188 Standard Specification for Extractable Hazardous Metals in Synthetic Turf Infill Materials: standard for testing fibers to comply with the Consumer Product Safety Toy Standard for heavy metals content. This method addresses health related exposures for Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium. Detected results in turf fiber and turf infill samples shall not exceed the ASTM 3188 standards for each individual metal.
- IV. Per and Polyfluoroalkyl Substances (PFAS): EPA Method 537.1 Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) modified using Isotope Dilution technique for 18 PFAS compounds as listed in the PFAS testing table of Document #32 plus EPA Method 533 LC/MS/MS modified using Isotope Dilution for two additional PFAS compounds for a total of 20 compounds tested. NYSDEC standard for testing solids for PFAS will be used as reporting limit criteria, as follows. Sample-specific Reporting Limits shall be less than or equal to 1.0 µg/kg (NYSDEC Memorandum, March 2019, for testing of PFAS under Part 375). Detected results for 6 PFAS compounds (perfluorodecanoic acid, perfluoroheptanoic acid, perfluorohexanesulfonic acid, perfluorononanoic acid, perfluorooctanesulfonic acid, and perfluorooctanoic acid), which represent the MassDEP regulated compounds and a subset of the 20 compounds tested, shall not exceed the MassDEP MCP Method 1 Standards for S1/GW1 in both the turf fibers and the turf infill.
- V. Volatile Organic Compounds (VOCs): Detected results for VOCs in both the turf fibers and the turf infill shall not exceed the MassDEP

MCP Method 1 Standards for S1/GW1 using EPA Method 8260B or 8260C Gas Chromatography-Mass Spectrometry (GC/MS) and methanol preservation (EPA Method 5035A) for MCP-regulated VOCs. Required reporting limits for non-detected compounds must be less than or equal to one half of the Method 1 Standard in µg /Kg dry weight. The MCP document "Quality Control Requirements and Performance Standards for the Analysis of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) in Support of Response Actions under the Massachusetts Contingency Plan (MCP)," WSC-CAM-IIA, July 2010 shall be used as guidance for acceptable analysis of VOCs in the artificial turf materials and for the required VOC analyte list (Table II A-2 of WSC-CAM-IIA).

- VI. Semi Volatile Organic Compounds (SVOCs): Detected results for SVOCs in both the turf fibers and the turf infill shall not exceed the lower of the MassDEP MCP Method 1 Standards for S1/GW1 using EPA Method 8270D Gas Chromatography-Mass Spectrometry (GC/MS) for MCP-regulated SVOCs or the anticipated ASTM Standard 65799 for Polyaromatic Hydrocarbons (PAHs), which are a subset of the MCP-regulated SVOCs. The ASTM Standard was not yet released as of the date of this Order of Conditions. The full-list of MCP-regulated SVOCs must be tested in the artificial turf material. Required reporting limits for non-detected compounds must be less than or equal to one half of the Method 1 Standard in µg/Kg dry weight or as specified in the ASTM Standard for PAH compounds. The MCP document "Quality Control Requirements and Performance Standards for the Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) in Support of Response Actions under the Massachusetts Contingency Plan (MCP)," WSC-CAM-IIB, July 2010 shall be used as guidance for acceptable analysis of SVOCs in the artificial turf materials and for the required SVOC analyte list (Table II B-2 of WSC-CAM-IIB).

58. Prior to construction, the Applicant shall submit the specifications for the artificial turf infill and blade material to the Conservation Commission.

S. Chapnick stated that the east side planting plan was sufficient but that the west side planting plan was insufficient. S. Chapnick also stated that she did not accept the alternatives analysis. S. Chapnick stated that the alternatives analysis lacks the option of an organically managed natural turf field over the same stormwater infiltration system proposed for the artificial turf field to allow for improved drainage and stormwater management than existing turf field and that having an organic turf field reduces the need for extensive nutrients and chemicals to be used for maintenance and that a natural turf field provides some habitat value and allows for a wildlife corridor to connect resource areas. S. Chapnick also stated that the primary driver of the artificial turf field was the increased playing time; however, there was no evaluation of how increased

temperatures due to Climate Change would impact the anticipated increase in playing time due to likely loss of playing time when fields are too hot to safely play on. S. Chapnick estimated that within the life-cycle of the artificial field, the loss of play time due to excessive heat would likely be the entire month of June.

S. Chapnick noted that though only a portion of the proposed artificial turf field is within the resource area, this is considered a “structure.” As such, S. Chapnick considers that the impact of the entire structure on the resource area is relevant, similar to how the Commission evaluates stormwater impacts to resource areas based on Section 2.B.2 of the Arlington Wetland Protection regulations.

S. Chapnick concluded that the adverse effects of the artificial turf field on resource area, resource area functions, and Climate Change resilience were unacceptable and too severe to mitigate effectively. S. Chapnick listed the following adverse effects: 1) the artificial turf field does not support any wildlife habitat functions or provide for a wildlife corridor thereby causing loss of connectivity of habitats; 2) Carbon dioxide released during the manufacture of the artificial turf field creates adverse climate impacts rather than mitigating climate impacts; 3) loss of Carbon sequestration, which is available in a natural turf field, as a climate change resilience strategy; 4) potential for contamination of resource area by plastic or crumb rubber infill migration; 5) artificial turf field exacerbate heat stress in already stressed resource area and heat island effects from artificial turf fields are supported by the temperature data presented by the Applicant; 6) there is potential for leachability of toxic chemicals from infill material into stormwater units and eventually into Mill Brook; 7) sustainability issues in that the artificial turf field requires replacement every 8 to 10 years which will further impact the resource area another 5 or 6 times over the life-cycle of the Arlington High School project; and 8) the cumulative effect of 3 artificial turf fields (one existing, one proposed in this application, and one to be installed outside of jurisdictional areas) and parking lots covering most of the area adjacent to the resource will increase the stress on the resource area.

N. Stevens motioned to approve the project for 869 Mass Avenue under the Wetlands Protection Act and Arlington Bylaw for Wetlands Protection with the special conditions discussed by the Commission, P. Heidell seconded, D. White voted to approve, D. Kaplan voted to approve, C. Tirone voted to approve, S. Chapnick voted to deny, motion approved.

**Request for Certificate of Compliance: 14 Lake Shore Drive
MassDEP File #091-0252**

Documents Reviewed:

- 1) *Proposed Conservation Plan for 14 Lake Shore Drive, prepared by Rober Survey, stamped by Clifford E Rober PLS #33189, dated 06/02/2014.*
- 2) *Proposed Landscape Plan for 14 Lake Shore Drive, prepared by Rober Survey, dated 06/02/2014.*
- 3) *Order of Conditions, dated 08/08/2014.*

- 4) *Request for Certificate of Compliance Letter and Form, prepared by Rober Survey, stamped by Clifford E Rober PLS #33189, dated 10/28/2019.*
- 5) *Certificate of Compliance As-Built Plan, prepared by Rober Survey, dated 8/05/2019.*

Resource Areas:

- 1) *FEMA Floodplain*
- 2) *100-ft Wetlands Buffer*

T. Stremlau presented the Request for Certificate of Compliance. The project as approved proposed to raze and rebuild an existing cabana and add resource area improvements through native plantings in the 100-ft wetlands buffer and floodplain of the Lower Mystic Lake. The project was approved on 08/08/2014. T. Stremlau explained that the as-built plan shows the movable dock in a different location than permitted because it is under repair and that it will be relocated to the approved location once repaired.

P. Heidell asked how the enclosed deck impacts compensatory flood storage. T. Braveman stated that it has no impact because it was installed with gaps to ensure flow of potential floodwaters.

E. Sullivan summarized her 07/14/2020 site inspection and recommended that the Commission issue a Certificate of Compliance. N. Stevens motioned to issue the complete Certificate of Compliance, D. White seconded, all were in favor, motion approved.

**Request for Certificate of Compliance: 18 Nourse Street
MassDEP File #091-0281**

Documents Reviewed:

- 1) *Notice of Intent for 18 Nourse Street, prepared by Oxbow Associates, dated 09/21/2016.*
- 2) *Proposed Structure Plan of Land for 18 Nourse Street, prepared by PFS Land Surveying Inc, stamped by Bryan G Parmenter PLS #48193, dated 08/23/2016.*
- 3) *Order of Conditions, dated 03/09/2017.*
- 4) *Request for Certificate of Compliance Letter and Form, prepared by Nelson Group Construction, dated 06/30/2020.*
- 5) *Certificate of Compliance As-Built Plan for 18-20 Nourse Street, prepared by Columbia Design Group, LLC, dated 05/09/2018.*

Resource Areas:

- 1) *100-ft Wetlands Buffer*
- 2) *Adjacent Upland Resource Area*

J. Do presented the Request for Certificate of Compliance. The project as approved proposed to raze an existing single family home and replace it with a two-family home in

the 100-ft wetlands buffer and AURA of No Name Brook. The project was approved on 03/09/2017.

The Commission requested documentation for the following conditions, which was not included in the Request for Certificate of Compliance:

40. Underground Infiltration Systems – As soon as each underground infiltration system is put into use, it shall be monitored during and after at least three major storms (more than 2 inches in 24 hours) during the first two years of operation to assure that all water infiltrates the ground completely within 72 hours after each storm. Results shall be reported to the Conservation Commission. After the initial monitoring period, each system shall be monitored in the same way at least twice annually during and after storms. Accumulated sediments shall be removed and disposed of in accordance with all applicable federal, state, and local laws. This shall be a continuing condition maintained in perpetuity and shall not expire with the issuance of the Certificate of Compliance.
42. At least 21 days prior to occupancy of the first building, the Applicant shall submit a final, revised Operation and Maintenance Plan for Commission review and approval. The approved plan shall include all stormwater management system components. The instructions in the approved Operation and Maintenance Plan must be followed in perpetuity and shall not expire with the issuance of the Certificate of Compliance. This shall be a continuing condition.
43. When requesting a Certificate of Compliance for this Order of Conditions, the applicant must submit a written statement from a Massachusetts professional engineer, registered land surveyor, or registered landscape architect certifying that the completed work complies with the plans referenced in this Order, and provide an as-built plan and statement describing any differences.

D. White motioned to continue the hearing to the 08/06/2020 meeting so that the Applicant could submit the materials for conditions #40, 42, and 43, N. Stevens seconded, all were in favor, motion approved.

Request for Certificate of Compliance: 46 Spy Pond Parkway MassDEP File #091-0300

The Applicant requested to continue the hearing. P. Heidell motioned to continue the hearing to the 08/06/2020 meeting, N. Stevens seconded, all were in favor, motion approved.

Working Session: 1165R Massachusetts 40B Proposal

S. Chapnick introduced the project and explained that this was a “Working Session” and not a “hearing.” D. St. Clair presented the project proposal to the Commission. This proposal is a “friendly” 40B housing redevelopment proposal that proposes to build a 130-unit multi-family residential rental project, which will include 25 affordable units. The project proposes to reuse two existing historical buildings and build two new buildings

Comment [SC1]: I deleted “friendly” because I am not in favor of using such subjective adjectives in the summary of the proposed project.

with garage parking. The project also proposes to increase open green space along Mill Brook and reduce the amount of impervious parking lot onsite.

The Property is currently largely impervious with hardscape (existing: 67.9%) and building (existing: 25.7%). There is very limited open pervious and vegetated space (existing: 6.4%). The proposed development proposes to reduce the impervious hardscape (proposed: 34.1%), increase the impervious building (proposed: 43.4%), and overall increase the open pervious and vegetated space (proposed: 22.5%). The pervious open space is proposed to include native vegetation enhancements.

The Applicant stated that they were unsure whether Ryder Brook is a jurisdictional Resource Area and thus whether the Riverfront Area Standards applied to Ryder Brook to this portion of the site. The Applicant also stated that they were unsure whether the site was eligible for the Historical Mill Complex exemption from the Riverfront Area requirements-regulations of the state Wetlands Protection Act Regulations (310 CMR, Section 10.58 (6) (k)). The Commission recommended filing separate Requests for Determination of Applicability to determine the jurisdiction of Ryder Brook and whether the site qualifies for the Historical Mill Complex exemption.

P. Heidell requested that as much vegetated buffer along Mill Brook is planted as practicable.

M. Gildesgame asked if porous materials are being proposed for the pathways, and if they will be ADA compliant. The Applicant stated that the pathway materials have not been selected yet. S. Chapnick recommended that the Applicant look at the porous pathway materials installed at Wellington Park and Spy Pond Park.

D. Kaplan asked whether green roofs or solar panels would be proposed as part of this project. The Applicant stated that the project is assessing the feasibility of solar panels on most if not all the buildings. D. Kaplan also recommended that the Applicant consider bringing the green spaces closer to Mill Brook (rather than the pedestrian walkway) and consider bump-outs over the Brook for pedestrian access.

N. Stevens asked the Commission if it was going to submit a comment letter to the Select Board regarding the MassHousing application submitted for this project. The public comment period is scheduled to end 08/07/2020, so if the Commission would like to submit a letter it can-should request a one week extension. E. Sullivan will draft a letter for the Commission to review at its 08/06/2020 meeting and request the one week extension.

C. Tirone asked if the project would include correcting any wall issues along the Mill Brook channel.

N. Stevens asked whether this project would-could meet the redevelopment standards in the Riverfront Area regulations. Wetlands Protection Act's redevelopment standards.
D. Wells stated that the project ?probably? would meet the redevelopment standards.

N. Stevens stated that it may be better to submit the project application under the redevelopment standards rather than with the Historical Mill Complex exemption.

D. White motioned to close the Commission meeting, N. Stevens seconded, all were in favor, motioned approved.

Meeting adjourned at 10:20pm.

DRAFT



Town of Arlington, Massachusetts

Review draft 08/06/2020 minutes

Summary:

Review draft 08/06/2020 minutes.

ATTACHMENTS:

| | Type | File Name | Description |
|---|---------------------------|--|--------------------------|
| ▢ | Meeting Minute (draft) | 08062020_Minutes_Conservation_Commission.pdf | Draft 08/06/2020 minutes |



Arlington Conservation Commission

Date: August 6, 2020

Time: 7:30pm

Location: Conducted through Remote Participation using Zoom

Minutes

Attendance: Commission Members Susan Chapnick (Chair), Pam Heidell, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioners Cathy Garnett and Mike Gildesgame; and Conservation Agent Emily Sullivan. Members of the public included Henri Schuette. Commissioner Member Dave Kaplan was absent.

07/09/2020 Meeting Minutes

The Commission discussed edits to the draft 07/09/2020 minutes. D. White motioned to approve the minutes as edited, P. Heidell seconded, all were in favor, motion approved.

07/16/2020 Meeting Minutes

The Commission discussed edits to the draft 07/16/2020 minutes. D. White motioned to approve the minutes as edited, C. Tirone seconded, all were in favor, motion approved.

Working Session: Eagle Scout Project at Mt. Gilboa

H. Schuette, Eagle Scout, presented a project proposal to restore two sections of trail in Mt. Gilboa that have eroded due to human use and washout ([Site A and Site B on proposed project plans](#)). H. Schuette proposed restoring the trail sections with native plantings, check dams, and water bars.

H. Schuette initially presented this project proposal to the Commission during its 06/04/2020 meeting. The Commission requested a more detailed project proposal with cost estimate and request for funds, which H. Schuette presented.

H. Schuette explained the COVID-19 safety precautions for the project, including social distancing, wearing masks, performing all work outside, and limiting the number of Scouts working together on tasks.

H. Schuette requested \$195.00 from the Commission to purchase supplies for this project.

D. White asked if erosion was an issue for Site A. H. Schuette said stormwater erosion is not an issue, but human use is an issue.

P. Heidell asked if a professional engineer reviewed the proposed plans. H. Schuette said that a professional engineer had not, but the property manager at Audubon Habitat provided guidance, who has trail restoration experience.

C. Garnett stated that conservation organizations like the Appalachian Mountain Club install stepping stones in trail sections similar to the two in Mt. Gilboa. C. Garnett asked if stepping stones were practical in Mt. Gilboa. H. Schuette stated that the stepping stones were not necessary and that they were beyond the capabilities of the Scouts.

S. Chapnick asked whether Site A would be seeded as part of this project. H. Schuette stated that Site A is shady and that the Scouts would not be able to maintain seeded areas in the long term. H. Schuette recommended that the area revegetate naturally.

D. White motioned to approve the project and allocate up to \$200.00 from [the Land Stewards the Conservation Stewardship Fund managed by the Arlington Land Trustfund](#), N. Stevens seconded, all were in favor, motion approved.

H. Schuette will work with E. Sullivan to submit a reimbursement request at the end of the project.

Administrative Updates

Internal Deadline for Commissioners to Send Reference Materials

The Commission discussed what a reasonable deadline is for a Commissioner to submit additional **reference** materials pertaining to hearings to the rest of the Commission prior to the hearing date. The Commission agreed that such **reference** materials should be sent to E. Sullivan by 5pm on the Monday prior to the hearing. Materials should be sent without expressing an opinion to ensure that the Commission remains in compliance with the Open Meeting Law. This deadline is a **"best practice,"** and there will be circumstances during which this deadline is not practicable. This deadline does not apply to Commissioners sending questions to E. Sullivan regarding an application. C. Tirone stated that most statements regarding a hearing should be made during the hearing and not through email prior to the hearing.

Request for Certificate of Compliance Internal Checklist

S. Chapnick presented an internal checklist for E. Sullivan to populate for Requests for Certificate of Compliance. C. Tirone cautioned against formatting the checklist in a way that would allow the Conservation Agent to make judgements that should be made solely by the Commission. [A draft checklist was discussed as a "working document" that E. Sullivan will use going forward to document Certificate of Compliance reviews.](#)

11 Norton Street, Lexington NOI MassDEP #unassigned

D. White presented a [proposalplan](#) to remove a paved driveway and gravel area [from within the boundaries of](#) Arlington's Great Meadows (AGM) and restore it with native vegetation. This proposal is part of a Notice of Intent submitted to the Lexington Conservation Commission for 11 Norton Street, [Lexington](#). The Lexington Conservation Commission requested that the Applicant reach out to the Arlington Conservation

Commission with this proposal and ask for feedback since the property is owned by the Town of Arlington. The Commission supported the removal of pavement/gravel and restoration of the area. The Commission made the following recommendations:

- Remove the gravel/pavement from AGM and restore the area with native seed mix/plantings
- Block off the restored area with boulders to allow pedestrian access but to block vehicles
- Install a fence along the property boundary with AGM
- Provide a plan that better identifies the restoration area and the proposed plantings there
- Provide a final copy of the plan to the Commission
- Record the plan with the Registry of Deeds

N. Stevens motioned to make the aforementioned recommendations to the Applicant for 11 Norton Street Lexington, D. White seconded, all were in favor, motion approved.

D. White volunteered to follow-up with the Applicant regarding the recommendations.

Thorndike Place 40B Application

E. Sullivan informed the Commission that the Zoning Board of Appeal's (ZBA) third-party reviewer, BETA Group, submitted a comment letter to the ZBA regarding the permit application materials. N. Stevens emailed the letter to the Commission. The ZBA has scheduled the application hearing for 08/11/2020.

1165R Massachusetts Ave MassHousing Application

The deadline for submitting comments was extended to September 7, 2020. The Commission discussed edits to the draft comment letter to the Select Board regarding the 1165R Mass Ave MassHousing Application. N. Stevens motioned to approve the letter as edited, P. Heidel seconded, all were in favor, motion approved.

Water Bodies Working Group

S. Chapnick announced that she is stepping down from the Water Bodies Working Group and invited other interested Commissioners to join. E. Sullivan stated that she spoke to D. Kaplan about getting involved in the Working Group and would follow up with him.

Native Cultivators

C. Garnett updated the Commission on appropriate language regarding native cultivators, which can be incorporated into the Regulations for Wetlands Protection update. C. Garnett volunteered to write up a native cultivator summary for the Commission.

**Request for Certificate of Compliance: 46 Spy Pond Parkway
MassDEP File #091-0300**

The Applicant requested to continue the hearing. N. Stevens motioned to continue the hearing to the 08/20/2020 meeting, D. White seconded, all were in favor, motion approved.

**Request for Certificate of Compliance: 18 Nourse Street
MassDEP File #091-0281**

The Applicant requested to continue the hearing. N. Stevens motioned to continue the hearing to the 08/20/2020 meeting, D. White seconded, all were in favor, motion approved.

Regulatory Update: Stormwater Management Section

The Commission reviewed and discussed Section 33: Stormwater Management for the Arlington Regulations for Wetlands Protection. The Commission also reviewed the proposed updates for the Stormwater Mitigation Bylaw, proposed by the Engineering Division, so that the two updates can be consistent. E. Sullivan will create a summary document of the proposed technical changes for the Commission to review, which can inform the update of Section 33. Discussion of this regulatory update will continue to the Commission's 08/20/2020 meeting.

D. White motioned to close the Commission meeting, N. Stevens seconded, all were in favor, motioned approved.

Meeting adjourned at 9:50pm.



Town of Arlington, Massachusetts

Spy Pond English Ivy

Summary:

Discuss English Ivy infestation along the Spy Pond Route 2 pathway

ATTACHMENTS:

| | Type | File Name | Description |
|---|--------------------|------------------------------------|-------------------------|
| ▢ | Reference Material | Brad_Barber_Ivy_Email_08062020.pdf | B Barber Email 08062020 |
| ▢ | Reference Material | Steve_Ricci_Ivy_Email_08062020.pdf | S Ricci Email 08062020 |

From: Brad Barber <bradb@shore.net>
To: "Emily Sullivan" <ESullivan@town.arlington.ma.us>
Cc: Steve ricci <sjricci@aol.com>, Bill Eykamp <bill@eykamp.org>
Date: 08/06/2020 07:47 PM
Subject: English Ivy on Rt. 2 path

CAUTION: This email originated from outside of the Town of Arlington's email system. Do not click links or open attachments unless you recognize the REAL sender (whose email address in the From: line in "< >" brackets) and you know the content is safe.

Hi Emily,

The ivy at the corner of Rt. 2 and Pleasant Street has expanded substantially this year. Attached are three pictures from mid-July. Ivy is covering the ground and growing up the trees. It has crossed the stone stairway.

ivy-Rt-2 200713a -- adjacent to the steps
ivy-Rt-2 200713b -- between the steps and Pleasant St., MassDOT property
ivy-Rt-2 200713c -- near the sandbar looking up the hill, private property

Ivy responds to Glyphosate in the springtime when the leaves first appear. To kill ivy on trees, a band of vegetation can be removed. Here's a discussion

<https://content.ces.ncsu.edu/controlling-english-ivy-in-urban-landscapes>

Please discuss with the Conservation Commission. I think it should be treated.

There's also a lot of bittersweet especially along the Rt. 2 fence near Pleasant Street and Spy Pond Pkwy. I've attached a photo from the Pleasant St. end. I think our efforts at hand-pulling bittersweet have been ineffective.

bittersweet-Rt 2 200713 -- Rt. 2 fence near Pleasant St.

--Brad

Attachments:



File: [ivy-Rt-2-steps 200713a.jpg](#)

Size: 715k

Content Type: image/jpeg



File: [ivy-Rt-2 200713b.jpg](#)

Size: 720k

Content Type: image/jpeg



File: [ivy-Rt-2 200713c.jpg](#)

Size: 674k

Content Type: image/jpeg



File: [bittersweet-Rt 2 200713.jpg](#)

Size: 514k

Content Type: image/jpeg

From: "S.J. RICCI" <sjricci@aol.com>
To: Brad Barber <bradb@shore.net>
Cc: Emily Sullivan <ESullivan@town.arlington.ma.us>, Bill Eykamp <bill@eykamp.org>
Date: 08/06/2020 09:53 PM
Subject: Re: English Ivy on Rt. 2 path

CAUTION: This email originated from outside of the Town of Arlington's email system. Do not click links or open attachments unless you recognize the REAL sender (whose email address in the From: line in "< >" brackets) and you know the content is safe.

Hi Brad, I've been walking the Rte 2 path most days this summer. I think the bittersweet is now our major issue. I, too, concluded that our manual efforts don't let us keep up nevermind gain on it.

Maybe there are some power tools like a mini Bobcat with an hydraulic arm that might be useful by the flat along the path but I suspect it will take chemicals to address those vines growing on steep banks.

Steve

Sent from my iPad

On Aug 6, 2020, at 19:47, Brad Barber <bradb@shore.net> wrote:

Hi Emily,

The ivy at the corner of Rt. 2 and Pleasant Street has expanded substantially this year. Attached are three pictures from mid-July. Ivy is covering the ground and growing up the trees. It has crossed the stone stairway.

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ivy-Rt-2 200713b -- between the steps and Pleasant St., MassDOT property
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bittersweet-Rt 2 200713 -- Rt. 2 fence near Pleasant St.

--Brad

<ivy-Rt-2-steps 200713a.jpg>
<ivy-Rt-2 200713b.jpg>
<ivy-Rt-2 200713c.jpg>

<bittersweet-Rt 2 200713.jpg>



Town of Arlington, Massachusetts

Chair/Vice Chair Draft Roles

Summary:

Review the roles and responsibilities of the Commission Chair and Vice Chair

ATTACHMENTS:

| | Type | File Name | Description |
|---|-----------------------|--|------------------------------|
| ▢ | Reference Material | DRAFT_Chair_Vice-Chair_Roles- 14AUG2020.pdf | Chair/Vice Chair Draft Roles |

DRAFT

Arlington Conservation Commission
Chair & Vice-Chair Roles / Responsibilities

Primary Roles:

The Chair's primary role is to ensure the proceedings of the ACC are in compliance with the MassDEP Wetlands Protection Act (WPA) and Town Bylaw / Town Wetland Regulations, as well as to supervise the Conservation Agent.

The Vice-Chair's primary role is to support the Chair in the administration of ACC meetings and proceedings and to serve in the Chair's absence when needed as directed by the Chair.

| Function / Role | Chair | Vice-Chair |
|---|--------------|-------------------|
| General Administration | | |
| Direct Supervision of Conservation Agent | X | |
| Ensure ACC proceedings in compliance with WPA, Town Bylaw, and Open Meeting Law | X | |
| Lead process improvements with Agent | X | |
| Responsible for oversight and accountability of funds (annual budget/w Agent) | X | |
| Call for Special Meetings | X | |
| Form sub/ ad hoc committees, assign tasks and duties, appoint members | X | |
| Identify training / educational opportunities for Commissioners with Agent | X | |
| ACC Meetings | | |
| Finalize ACC Meeting Agenda with Agent | X | Support* |
| Primary responsibility for chairing / running ACC Meetings | X | Support* |
| Chair and Vice Chair preside over permit hearings, as delegated by Chair | X | X |
| Co-Host virtual Zoom meetings | X | X |
| Monitor virtual meetings: admit late attendees; monitor waiting room; move disruptive participants to waiting room; lock down meeting if needed | | X |
| Call for Commissioners to make Motions & Vote on Agenda Items / Hearings | X | Support* |
| Meeting Minutes – review drafts | X | X |
| Site Visits | | |
| Most site visits will be conducted by the ACC Agent; complex sites and site violations should have representation from the Chair and/or Vice-Chair (as well as other Commissioners) | X | X |
| Site visit notes – prepare and/or review drafts | X | Support* |
| ACC Wetland Regulations | | |
| Lead ACC for Town Wetland Regulations Revisions | X | Support* |
| Public Outreach | | |
| Lead Public presentations outreach with ACC Agent to advance Wetland Protection (MACC; other meetings – all Commissioners may participate) | X | Support* |
| Assist ACC Agent with Educational materials | X | X |
| Represent the Commission at public meetings before Town Boards, or as delegated by Chair | X | Support* |

*Supporting role and take lead when Chair is unavailable, at direction of Chair



Town of Arlington, Massachusetts

DPW Renovation Working Session

Summary:

DPW Renovation Working Session

This project proposes a new/renovated Municipal Facility to support the DPW, ISD, Facilities, and IT departments at 51 Grove Street. The proposed site includes the current 4.4-acre parcel, used by DPW / ISD, and an adjacent 1.4-acre portion of Town-owned land for a total of 5.8 acres. Sections of the site are within the 100-ft Wetlands Buffer, AURA, and 200-ft Riverfront Area of Mill Brook, as well as floodway and floodplain.

The work includes demolition of the existing ancillary salt/sand storage structures and fueling system, renovation of the four existing structures (Buildings A, B, C, and D), construction of a new 2-story 43,000 square-foot operations building, construction of a new salt storage structure, construction of a new state-of-the-art fueling system, and overall site improvements.

Overall, the new facility includes numerous significant improvements to both the site and operations, including:

- improved stormwater and runoff management
- improved storage of vehicles, equipment and materials (indoor vs. outdoor)
- improved storage and handling of liquid petroleum products
- improved vehicle washing operations

ATTACHMENTS:

| | Type | File Name | Description |
|---|--------------------|--|--------------------------------|
| ▢ | Reference Material | Arlington_Municipal_Facility_Letter_08-06-20.pdf | DPW Renovation Project Summary |

Arlington – DPW / ISD / Facilities / IT Municipal Facility

August 06, 2020

Emily Sullivan
Environmental Planner & Conservation Agent
Town of Arlington
730 Massachusetts Avenue
Arlington, MA 02476

**Re: *Request for a Working Session
New/Renovated DPW / ISD / Facilities / IT Municipal Facility
Arlington, Massachusetts***

Dear Ms. Sullivan:

On behalf of the Arlington Department of Public Works, Weston & Sampson Engineers, Inc. (W&S) is hereby submitting a request to schedule a working session with the Arlington Conservation Commission to discuss the proposed new / renovated municipal facility at 51 Grove Street to support the Department of Public Works (DPW), Inspection Services Department (ISD), Facilities Department, and Information Technology Department (IT). The proposed site is the current home of the Department of Public Works and Inspectional Services Department.

Background

The Town of Arlington is proposing a new/renovated Municipal Facility to support the DPW, ISD, Facilities, and IT departments at 51 Grove Street. The DPW and ISD currently occupy the existing site. The proposed site includes the current 4.4-acre parcel, used by DPW / ISD, and an adjacent 1.4-acre portion of Town-owned land for a total of 5.8 acres. The new/renovated facility is necessary due to deteriorating conditions at the current facilities which have been in use for many years and are in need of upgrade to meet today's operational and safety needs.

The Public Works Department offices and equipment maintenance operations, along with the Inspectional Services Department, will be relocated to a new two-story building constructed on site. Of the four existing structures on site (see below), two of the structures will be repurposed to house the Town's IT Department and Facilities Department. The remaining two existing site structures will be renovated to now house a large portion of the DPW vehicles and equipment currently stored outside. The renovations will provide minimally heated space to store vehicles and equipment indoors. This improved indoor storage will extend the life of the equipment, reduce environmental impacts, and create more efficient and cost-effective operations.

The new facility will be an overall improvement to the Town environmentally, aesthetically, operationally, and it will protect the Town's multimillion-dollar investment in its vehicles and equipment, while also providing a new home for two additional essential Town Departments.

Site Description

The site is currently developed with four (4) primary structures (Building A, B, C, and D as shown on attached C201), two (2) ancillary support structures (salt/sand structures), and a town-wide fueling system. The site also contains numerous smaller support buildings/sheds/storage containers located throughout the site. The site is bisected by Mill Brook. The brook is primarily located below grade in a culvert with several openings to the site along the culvert. The attached plans outline the resource areas accordingly. The entire site, with the exception of a small area near Grove Street, is covered with an impermeable layer (pavement and/or concrete). Due to historic contamination on the site, this paved surface is a requirement of the Massachusetts Department of Environmental Protection as a means of capping the historic contamination and therefore must remain.

Description of Work Proposed

The work includes demolition of the existing ancillary salt/sand storage structures and fueling system, renovation of the four existing structures (Buildings A, B, C, and D), construction of a new 2-story 43,000 square-foot operations building, construction of a new salt storage structure, construction of a new state-of-the-art fueling system, and overall site improvements. The site improvements will include, but are not limited to, earthwork, grading, a new stormwater management system, paving for circulation/parking, utilities, curbing, town recycling amenities, DPW material storage bins, and site lighting.

The new/renovated facilities will be for Town use. The facilities will include seven (7) main operational components:

- 1) Administration offices and employee support spaces;
- 2) Vehicle and equipment storage garage;
- 3) Shop spaces;
- 4) Vehicle & Equipment maintenance area;
- 5) Vehicle wash bay;
- 6) Salt shed; and
- 7) Fueling facility.

It should be noted that any storage of liquid petroleum products incidental to the use of the building will be in free standing containers located inside the structure on a poured cement concrete floor and portions of the building will include concrete secondary containment sumps. Also, the fueling facility will be comprised of two (2) 10,000-gallon underground double-walled / leak detected tanks to store and dispense diesel fuel and gasoline. The fueling area will consist of a concrete island / pad which will include a secondary containment positive limiting barrier around the perimeter of the concrete pad.

In addition, the vehicle wash bay will be fully enclosed, and all wash liquids will drain through a trench drain, deep sump, and a grit separation tank with overflow to the sewer system. It should be noted that there will be no discharge from the wash bay to the stormwater system.

Finally, the facility will include a diesel standby generator to power the facility and operation during an outage. The generator will have an integrated diesel storage tank with double-wall containment.

Overall, the new facility includes numerous significant improvements to both the site and operations, including:

- improved stormwater and runoff management
- improved storage of vehicles, equipment and materials (indoor vs. outdoor)
- improved storage and handling of liquid petroleum products
- improved vehicle washing operations

We look forward to meeting with the Conservation Commission to discuss this important project.

Very truly yours,

WESTON & SAMPSON



Jeffrey J. Alberti, LEED-AP
Vice President

cc: Mike Rademacher, Town of Arlington
Joshua Sydney, OPM
Dave Steeves, Weston & Sampson
Mike Richard, Weston & Sampson
Mike Dupuis, Commodore Builders

VOLUME III BUILDING E

TOWN OF ARLINGTON PUBLIC WORKS FACILITY RENOVATIONS & ADDITION

51 GROVE STREET ARLINGTON, MA 02476

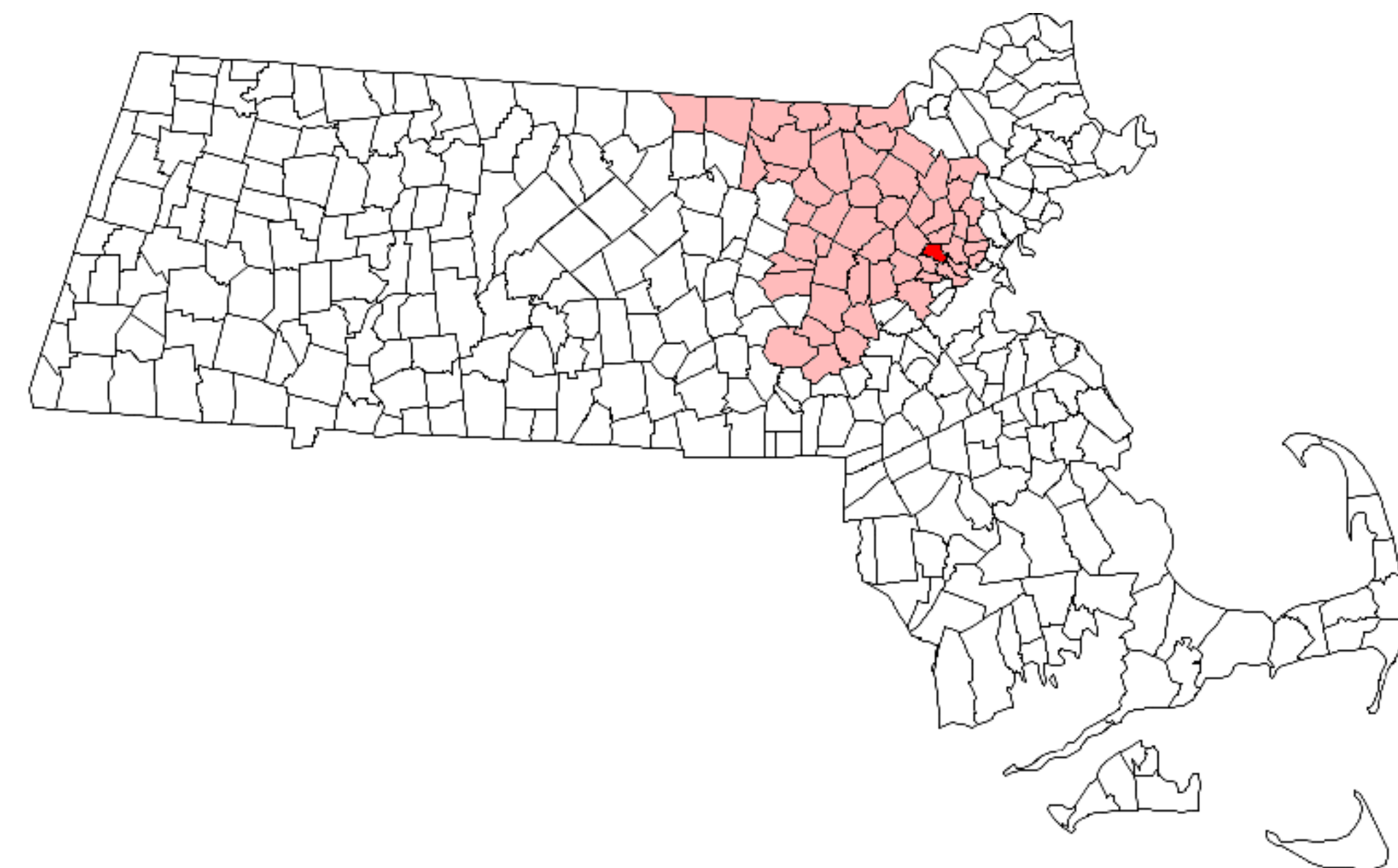


Weston & SampsonSM

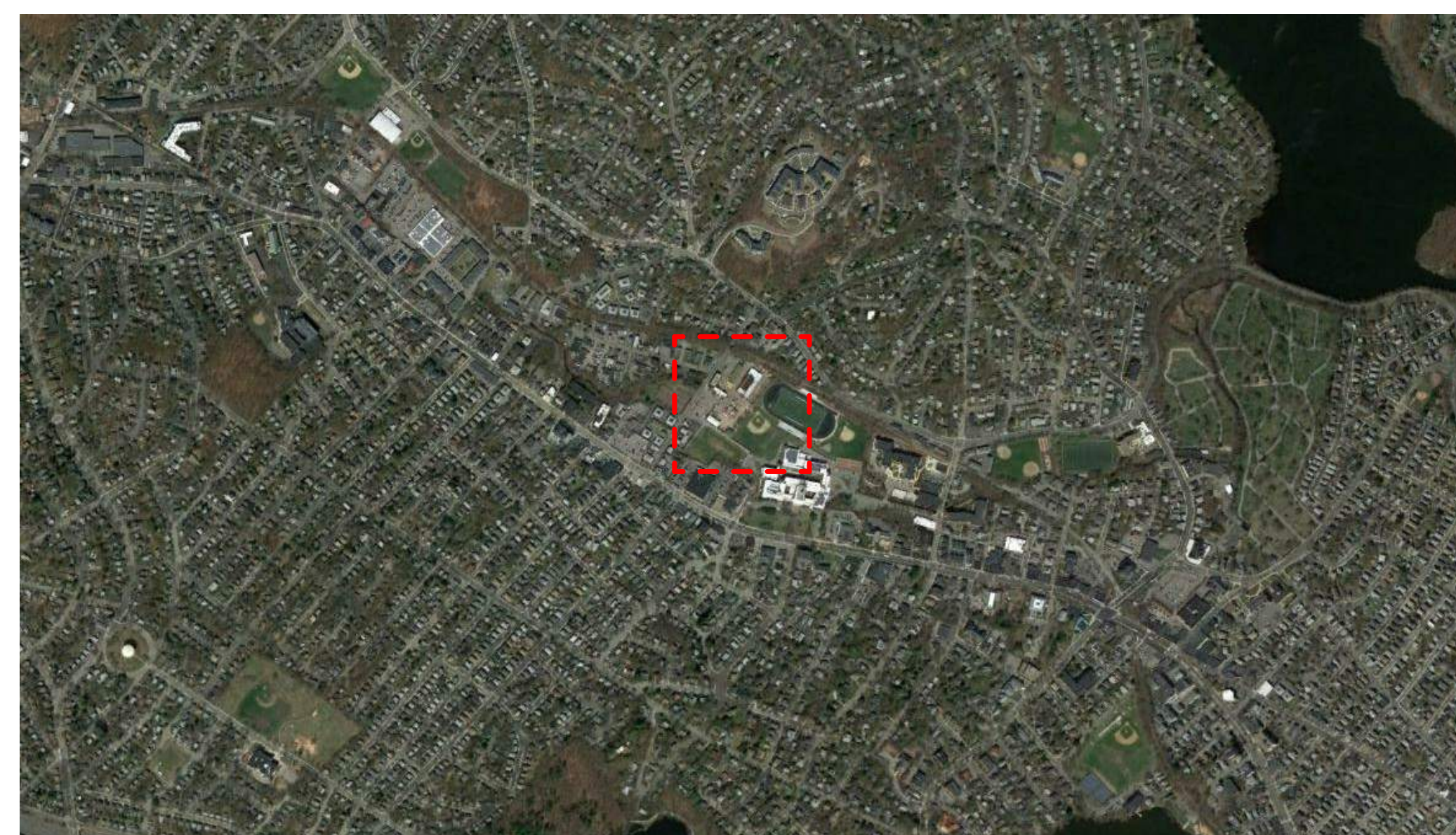
Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard Suite 250
Foxborough, MA 02035
(508) 698-3034 (800) SAMPSON
www.westonandsampson.com

 **GARCIA-GALUSKA DESOUSA**
CONSULTING ENGINEERS INC.
370 Faunce Corner Road, Dartmouth, MA 02747-1271
508-998-5700 • FAX 508-998-0883 • E-MAIL info@g-g-d.com

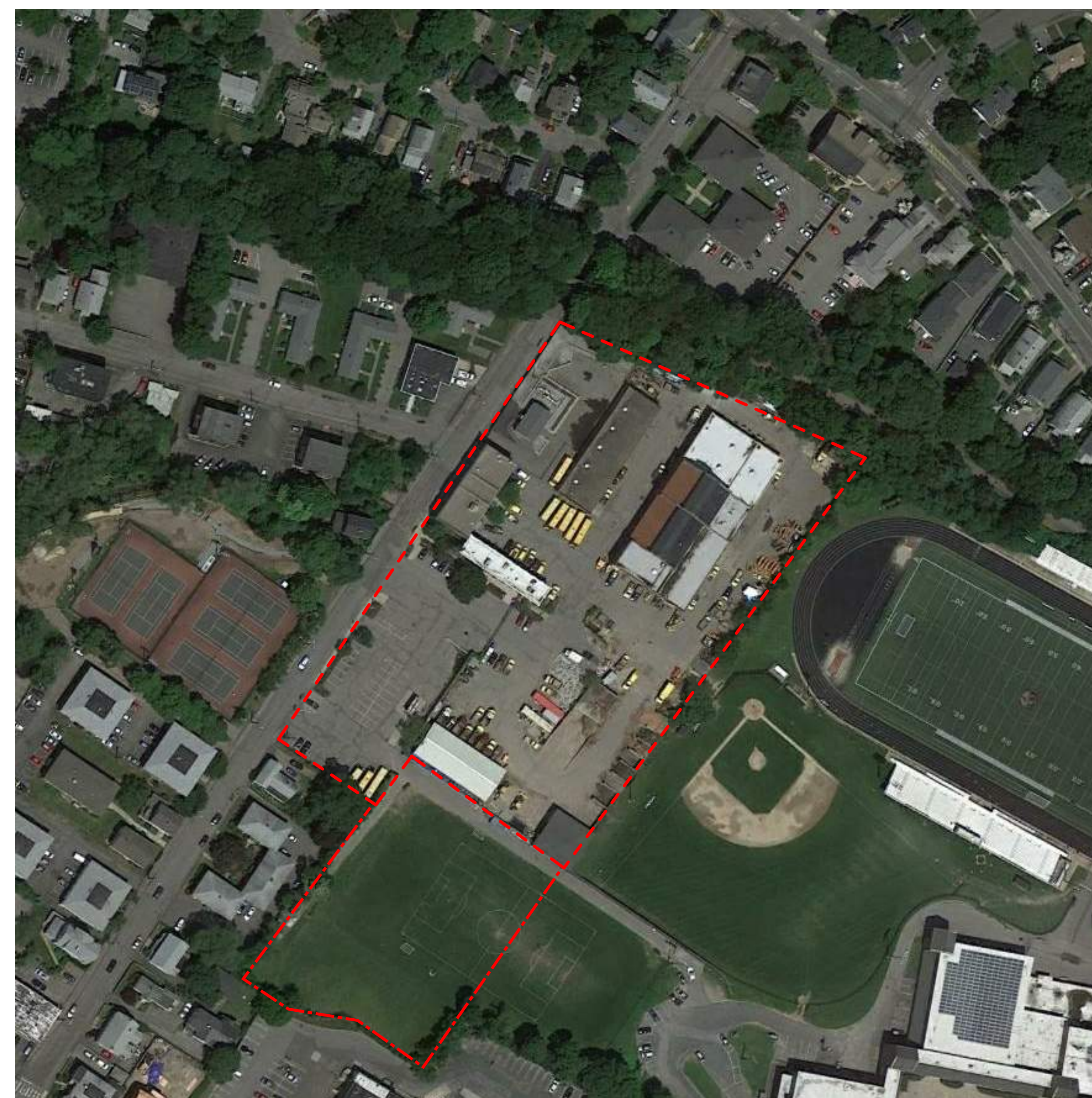
CODE RED
CONSULTANTS



MASSACHUSETTS MUNICIPAL MAP: N.T.S.



SITE LOCUS MAP: N.T.S.

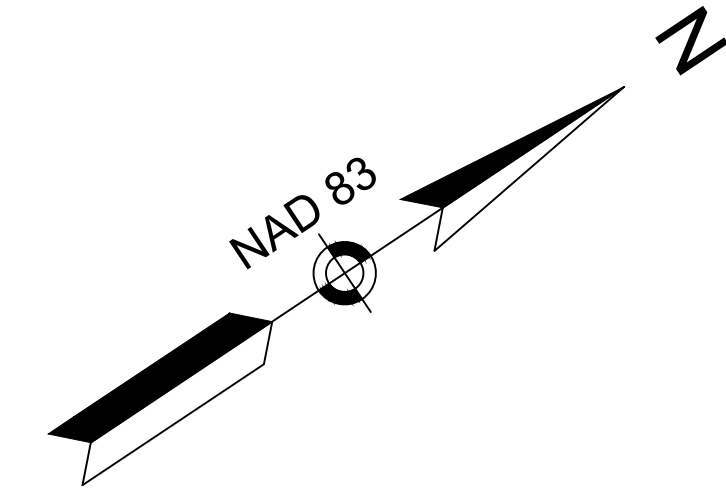


SITE OVERVIEW: N.T.S.

August 06, 2020

ISSUED FOR:
DESIGN
DEVELOPMENT

- LEGEND**
- EDGE OF WOODS
DECIDUOUS TREE
CONIFEROUS TREE
SHRUB/BUSH
SIGN
UTILITY POLE
LIGHT POLE
HYDRANT
WATER SHUTOFF
GAS VALVE
WATER VALVE
MONUMENT
IRON PIN / IRON ROD
HANDICAP SPACE
PROPERTY LINE
EASEMENT
STORM SEWER LINE
SANITARY SEWER LINE
WATER LINE
GAS LINE
SIGNAL WIRE LINE
CABLE LINE
FIBER OPTIC LINE
LOW PRESSURE SEWER LINE
ELECTRIC LINE
HEATING LINE
TELEPHONE LINE
SANITARY MANHOLE (SMH)
STORM MANHOLE (STMH)
CATCHBASIN (CB)
METAL POST/BOLLARD (BOL)
ELECTRIC MANHOLE (MHE)
MISC. MANHOLE (MH)
TELEPHONE MANHOLE (MHT)
MAJOR CONTOUR LINE
MINOR CONTOUR LINE
- CLEAN UTILITY CORRIDOR
EASEMENTS
100 YEAR FLOOD LINE PER FEMA
REGULATORY FLOODWAY PER FEMA



Weston & Sampson
Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
(508) 698-3034 (800) SAMPSON
www.westonandsampson.com

Consultants:

Seal:

Revisions:

| Rev | Date | Description |
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Issued For: PERMITTING

SCALE: AS NOTED

Date: July 2020
Drawn By: EC
Reviewed By: LFK
Approved By: LFK
W&S Project No: 2170997

Drawing Title:

**EXISTING
CONDITIONS
PLAN**

Sheet Number:

C101

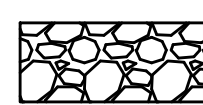
WESTON & SAMPSON COPYRIGHT 2019



NOTES:

- BEARINGS REFER TO THE MASSACHUSETTS NAD 83 STATE PLANE COORDINATE SYSTEM (MAINLAND ZONE).
- ELEVATIONS REFER TO THE 1988 NORTH AMERICAN VERTICAL DATUM (NAVD 88).
- REFERENCE IS MADE TO THE FOLLOWING MAPS:
 - "PLAN SHOWING LAND IN ARLINGTON, MASSACHUSETTS TO BE CONVEYED TO TOWN OF ARLINGTON BY MYSTIC VALLEY GAS COMPANY", BY W.H. ROBY, SCALE 1" = 80', DATED AUGUST 30, 1960, RECORDED AS PLAN 1629 OF 1960 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS.
 - "PLAN OF THE RELOCATION OF GROVE STREET ARLINGTON AS ORDERED BY THE COUNTY COMMISSIONERS", SCALE 1" = 40', DATED 1964, RECORDED AS PLAN 133 OF 1964 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS.
 - "THE COMMONWEALTH OF MASSACHUSETTS METROPOLITAN DISTRICT COMMISSION SEWERAGE DIVISION PLAN OF LAND IN ARLINGTON", SCALE 1" = 40', DATED MAY 1966, RECORDED AS PLAN 281 OF 1967 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS.
 - "PLAN OF LAND IN ARLINGTON, MASS.", BY R.L. HIGGINS, SCALE 1" = 40', DATED SEPTEMBER 11, 1973, RECORDED AS PLAN 144 OF 1975 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS.
 - "PLAN OF LAND IN ARLINGTON, MASS.", BY JOS. J. SULLIVAN, SCALE 1" = 40', DATED OCTOBER 6, 1975, RECORDED AS PLAN 1055 OF 1975 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS.
 - "PLAN OF LAND IN ARLINGTON - MASS. SHOWING PROPOSED TRANSFER OF LAND BETWEEN GAS CO. AND TOWN OF ARLINGTON", BY CHARLES F. RINCIARI, SCALE 1" = 20', DATED SEPT. 1976, RECORDED AS PLAN 1190 OF 1976 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS.
- "TOPOGRAPHICAL PLAN OF LAND IN ARLINGTON, MASS.", BY SCHOFIELD BROTHERS, INC., SCALE 1" = 20', DATED JANUARY 27, 1977, ADDITIONS, JAN. 31, 1977.
- "ACTIVITY AND USE LIMITATION PLAN OF LAND ARLINGTON, MASS. (MIDDLESEX COUNTY) PREPARED FOR: BROWN & CALDWELL", BY SCHOFIELD BROTHERS OF NEW ENGLAND, INC., SCALE 1" = 20', DATED JANUARY 20, 2015, RECORDED AS PLAN 144 OF 1975 OF THE MIDDLESEX SOUTH REGISTRY OF DEEDS
- "SITE PLAN & BORINGS", BY SYMMES MAINI & MCKEE INC. SCALE 1" = 20', DATED MARCH 1, 1977.
- "SITE SURVEY PLAN" BY SYMMES MAINI & MCKEE INC. SCALE 1" = 20', DATED MARCH 1, 1977.
- THE PROPERTY IS TOGETHER WITH AND SUBJECT TO SUCH EASEMENTS AND RIGHTS OF RECORD AS MAY APPEAR.
- UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING AND OTHER DATA SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES, GOVERNMENTAL AGENCIES AND/OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO WESTON & SAMPSON. THE EXISTENCE, SIZE AND LOCATION OF ALL SUCH FEATURES MUST BE DETERMINED AND VERIFIED IN THE FIELD BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG.
- INVERTS NOT ATTAINABLE DO TO ICE OR OTHER DEBRIS RESTRICTING VISIBILITY AND OR ACCESS. INVERTS WERE TAKEN FROM RECORD DRAWINGS LISTED AS 3(I) & 3(J) IN THE ABOVE NOTES AND CONVERTED TO NEW ELEVATION VALUES BASED ON NAVD 88 DATUM.
- EXISTING CONDITIONS ARE SHOWN BASED ON EXISTING CONDITION SURVEY PREPARED BY WESTON & SAMPSON, DATED FEBRUARY 16, 2018.

SITE PREPARATIONS LEGEND



STABILIZED CONST ENTRANCE



EXISTING BUILDING/STRUCTURE TO
REMAIN



LIMIT OF WORK



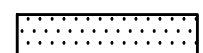
TREE REMOVAL



TREE PROTECTION



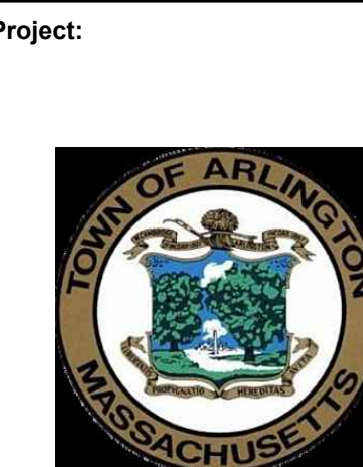
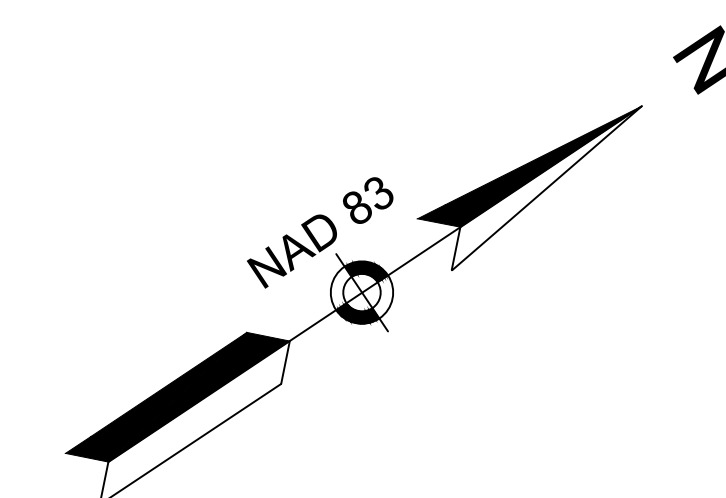
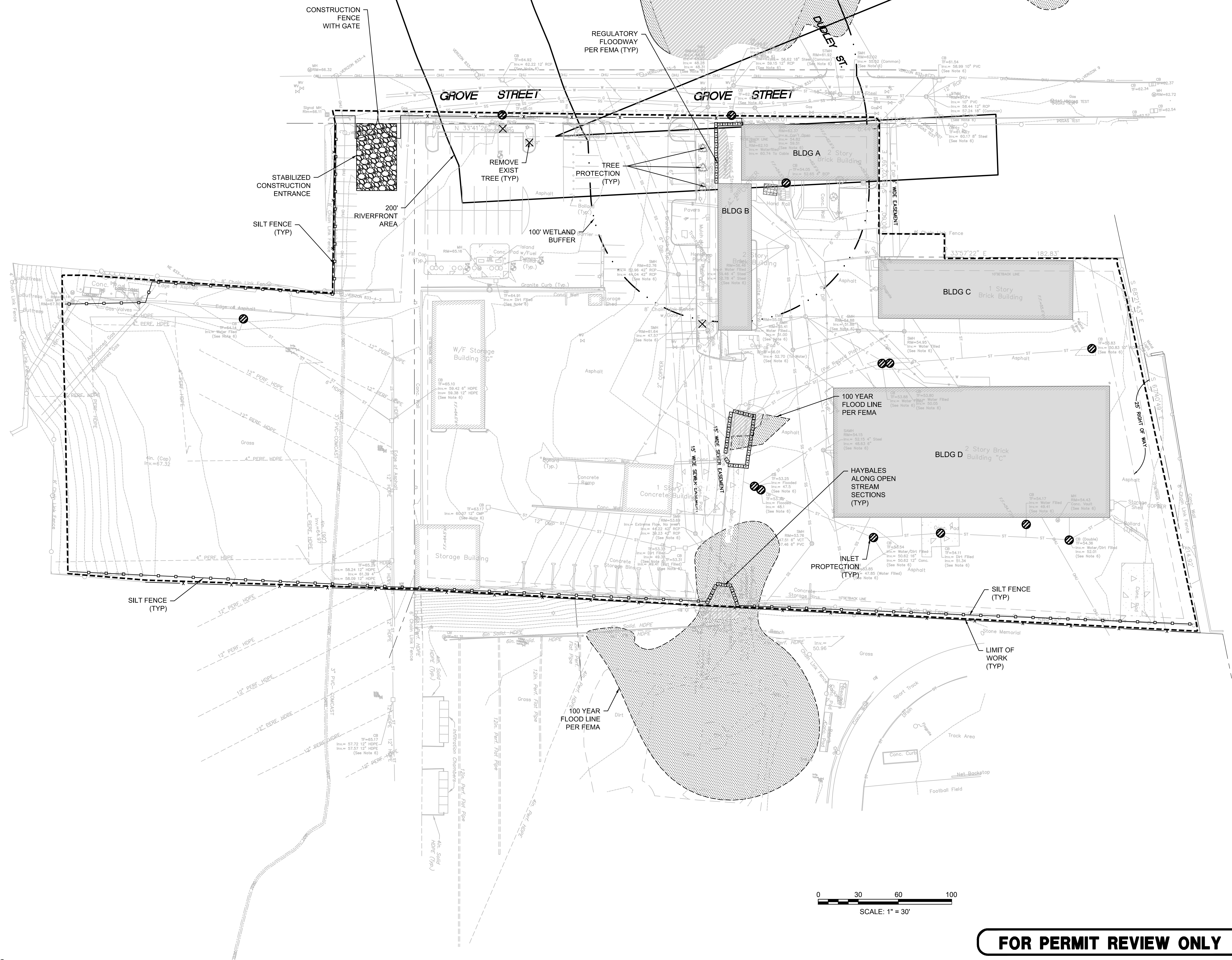
TREE PROTECTION



100 YEAR FLOOD LINE PER FEMA



REGULATORY FLOODWAY PER FEMA

Weston & SampsonSM

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard Suite 25
Foxborough, MA 02035
(508) 698-3034 (800) SAMPSON
www.westonandsampson.com

Consultants

Seal

Revisions

[illegible]

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| Issued For: | PERMITTING |
|-------------|------------|

SCALE: AS NOTED

Date: July 2020

Drawn By: EC

Reviewed By: LFI

Approved By: J.E.

W&S Project No: 2170997

Drawing Title:

SOIL EROSION AND SEDIMENT CONTROL PLAN

Sheet Number

C201

INSTITUTIONAL ARRANGEMENTS FOR

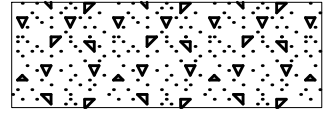


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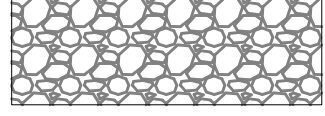
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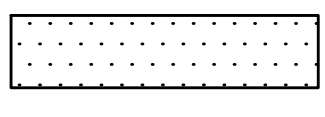
HMA PAVEMENT



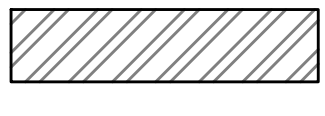
CONCRETE



CRUSHED STONE



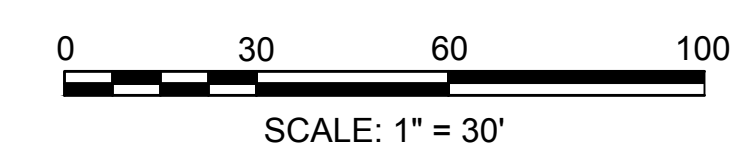
100 YEAR FLOOD LINE PER FEMA



REGULATORY FLOODWAY PER FEMA

NOTES:

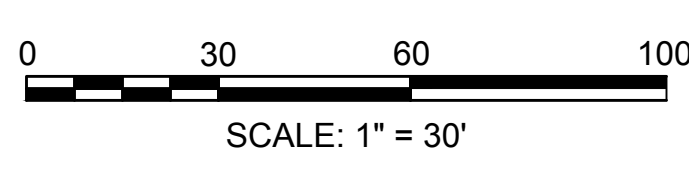
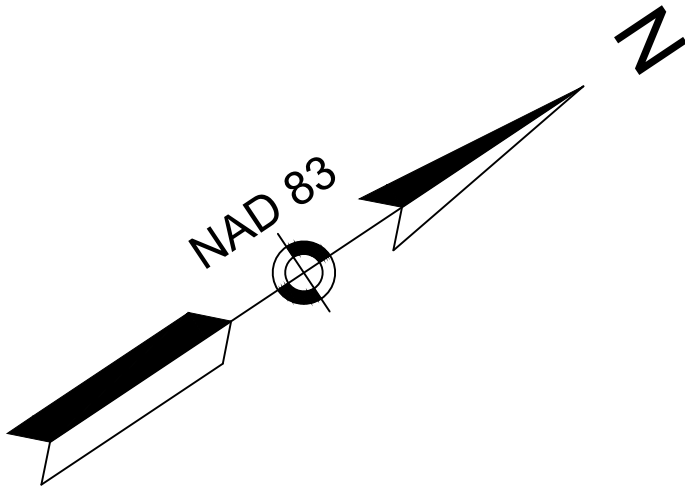
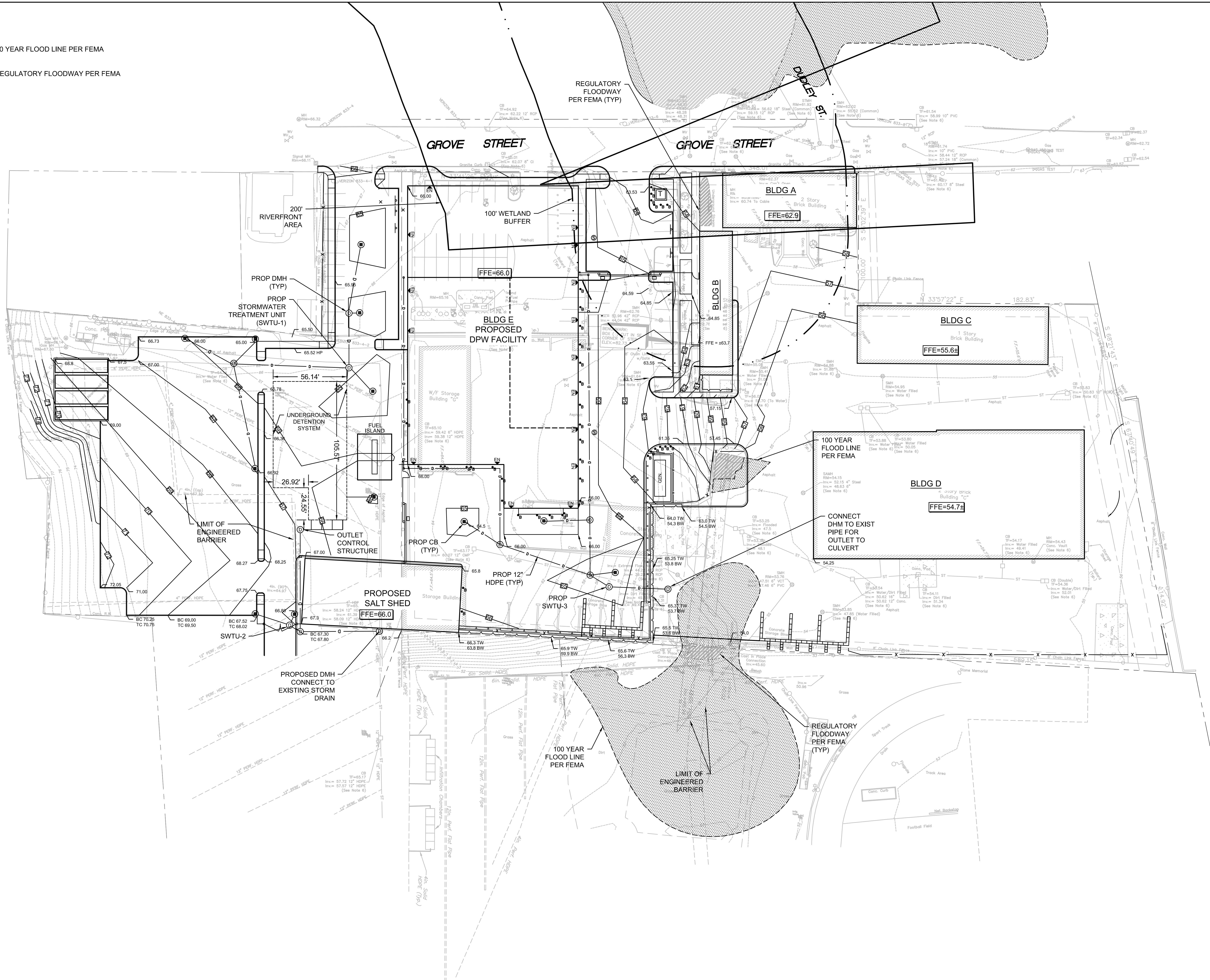
1. GRANITE CURB SHALL BE TYPE VA-4 UNLESS OTHERWISE IDENTIFIED.
2. EXISTING SITE CONDITIONS SHOWN ARE FROM GROUND SURVEYS PROVIDE 6" HMA PAVING BELOW SALT SHED.
3. PROVIDE NEW HOT MIX ASPHALT PAVEMENT BETWEEN ALL PROPOSED CURB LINES, EDGE OF PAVEMENT & BUILDINGS (INCLUDING UP TO SAWCUT LIMITS).
4. ALL SAWCUTS SHALL HAVE RS-1 ASPHALT EMULSION TACK COAT ADDED PRIOR TO ABUTTING PAVEMENT, MATCHING EXISTING CONDITIONS.
5. CONTRACTOR SHALL PATCH EXISTING PAVED AREAS WITH HMA FOLLOWING UTILITY INSTALLATION
6. ALL BACKFILL MATERIAL BELOW PROPOSED BUILDINGS SHALL CONSIST OF STRUCTURAL FILL PER EARTHWORK SPECIFICATION 31 00 00.



FOR PERMIT REVIEW ONLY

LEGEND:

- 100 YEAR FLOOD LINE PER FEMA
- REGULATORY FLOODWAY PER FEMA



Weston & Sampson
Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
(508) 698-3034 (800) 5AMPSON
www.westonandsampson.com

Consultants:

Seal:

Revisions:

| Rev | Date | Description |
|-----|------|-------------|
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Issued For: PERMITTING

SCALE: AS NOTED

Date: July 2020
Drawn By: EC
Reviewed By: LFK
Approved By: LFK
W&S Project No: 2170997

Drawing Title:

GRADING AND DRAINAGE PLAN

Sheet Number:

C601

FOR PERMIT REVIEW ONLY



Town of Arlington, Massachusetts

Regulation Update

Summary:

Regulations Update: Section 33 Stormwater Management

ATTACHMENTS:

| | Type | File Name | Description |
|---|-----------------------|--------------------------------------|-----------------------------------|
| ▢ | Reference Material | Section_33_Stormwater_Management.pdf | Section 33: Stormwater Management |

Section 33 - Stormwater Management

A. Work or activity specified in a request for determination of applicability or an application for a permit and subject to the Bylaw shall meet, at a minimum and to the extent practicable, the best management practices for stormwater management as set forth in the Stormwater Standards of the Massachusetts Department of Environmental Protection. The Commission may in its sole discretion require the applicant to provide a runoff plan and calculations using the “Cornell” method, and based on the ten-year, fifty-year and one-hundred-year-flood frequency event period. Calculations shall show existing and proposed runoff conditions for comparative purposes and include a narrative on the proposed project’s impact on climate change resilience of the resource area (see Section 31).

B. The requirements of this section shall be met commensurate with the nature, scope, type, and cost of the proposed project or activity



Town of Arlington, Massachusetts

Request for Determination of Applicability: 22 Lawrence Lane

Summary:

Request for Determination of Applicability: 22 Lawrence Lane
Arlington File #A20.3

The project proposes to build a new deck and renovate an existing patio within the 100-ft Wetlands Buffer and AURA of an isolated wetland. The proposed project will reduce the amount of impervious surface by 231 square feet.

ATTACHMENTS:

| | Type | File Name | Description |
|---|--|--------------------------------|----------------------|
| ▣ | Request for Determination of Applicability | 22_Lawrence_Lane_Final_RDA.pdf | 22 Lawrence Lane RDA |



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

ARLINGTON
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Applicant:

Brian Hodous

Name

blhodous@gmail.com

E-Mail Address

22 Lawrence Lane

Mailing Address

Arlington

City/Town

MA

State

02474

Zip Code

617-308-1086

Phone Number

Fax Number (if applicable)

2. Representative (if any):

Archadeck

Firm

Larry Cohen

Contact Name

lcohen@archadeck.com

E-Mail Address

16 Adams Street

Mailing Address

Burlington

City/Town

MA

State

01803

Zip Code

617-593-8975

Phone Number

Fax Number (if applicable)

B. Determinations

1. I request the Arlington make the following determination(s). Check any that apply:
Conservation Commission

- ☒ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- ☐ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- ☒ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- ☐ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Arlington, MA

Name of Municipality

- ☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

22 Lawrence Lane

Street Address

Arlington

City/Town

Lot 14

Parcel/Lot Number

Assessors Map/Plat Number

- b. Area Description (use additional paper, if necessary):

- c. Plan and/or Map Reference(s):

Title

Date

Title

Date

Title

Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

1. Build new wood framed deck supported on helical steel pier footings (approx. 22'x16'), with railings, integrated hot tub support platform and stairs to yard.
2. Renovate the existing raised patio. Flagstone & cement slab removed and new modular concrete pavers resting on a porous compacted stone & sand based installed. Includes a short walkway from deck steps to side yard.
3. Project will reduce the amount of impervious surface onsite by 231 square feet. The deck itself is porous and the patio base is going from solid concrete to porous stone pack and sand. This project considers climate change by reducing the amount of impervious surface and improving stormwater infiltration.



WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single-family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☐ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

ARLINGTON
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Brian Hodous

Name

22 Lawrence Lane

Mailing Address

Arlington

City/Town

MA

State

02474

Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Signature of Applicant

Date

8/4/2020

Signature of Representative (if any)

Date

8/4/20

Project Narrative

22 Lawrence Lane, Arlington, MA 02474

1. Build new wood framed deck supported on helical steel pier footings (approx. 22'x16'), with railings, integrated hot tub support platform and stairs to yard.
2. Renovate the existing raised patio. Flagstone & cement slab removed and new modular concrete pavers resting on a porous compacted stone & sand based installed. Includes a short walkway from deck steps to side yard.
3. Project will reduce the amount of impervious surface onsite by 231 square feet. The deck itself is porous and the patio base is going from solid concrete to porous stone pack and sand. This project considers climate change by reducing the amount of impervious surface and improving stormwater infiltration.

Kristin & Brian Hodou
22 Lawrence Lane, Arlington MA

Contract: _____ Date: _____

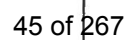
Client Signature _____

Client Signature _____

Builder Signature _____

Scale: $V_4'' = 1'-0''$

22 Lawrence Lane

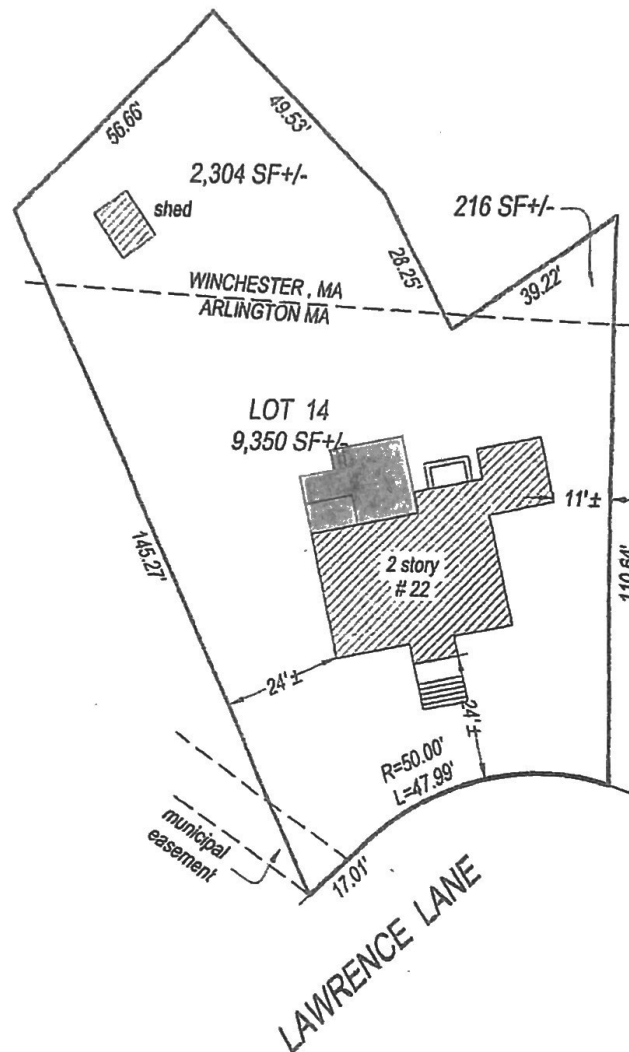
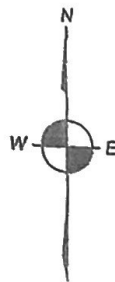


LOCATION: 22 LAWRENCE LANE
CITY, STATE: ARLINGTON, MA
APPLICANT: HODOUS & WILLIAMS
CERTIFIED TO: LEADER BANK, N.A.
DATE: 03-13-2017



BOSTON
SURVEY, INC.

P.O. BOX 260220
CHARLESTOWN, MA 02129
T (617) 242-1313; F (617) 242-1616
WWW.BOSTONSURVEYINC.COM



SCALE: 1" = 30'

FLOOD DETERMINATION

According to Federal Emergency Management Agency maps, the major improvements on this property fall in an area designated as

ZONE: X

COMMUNITY PANEL No. 25017C0416E

EFFECTIVE DATE: 6/4/2010

REFERENCES

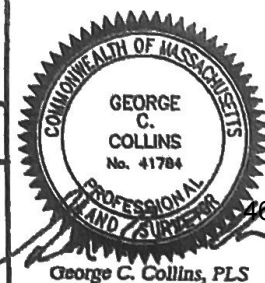
DEED: 66285/430

PLAN: 8353/195

NOTE: To show an accurate scale this plan must be printed on legal sized paper (8.5" x 14")

The permanent structures are approximately located on the ground as shown. They either conformed to the setback requirements of the local zoning ordinances in effect at the time of construction, or are exempt from violation enforcement action under M.G.L. Title VII, Chapter 40A, Section 7, and that there are no encroachments of major improvements across property lines except as shown and noted hereon.

This is not a boundary or title insurance survey. This plan should not be used for construction, recording purposes or verification of property lines.



[illegible]

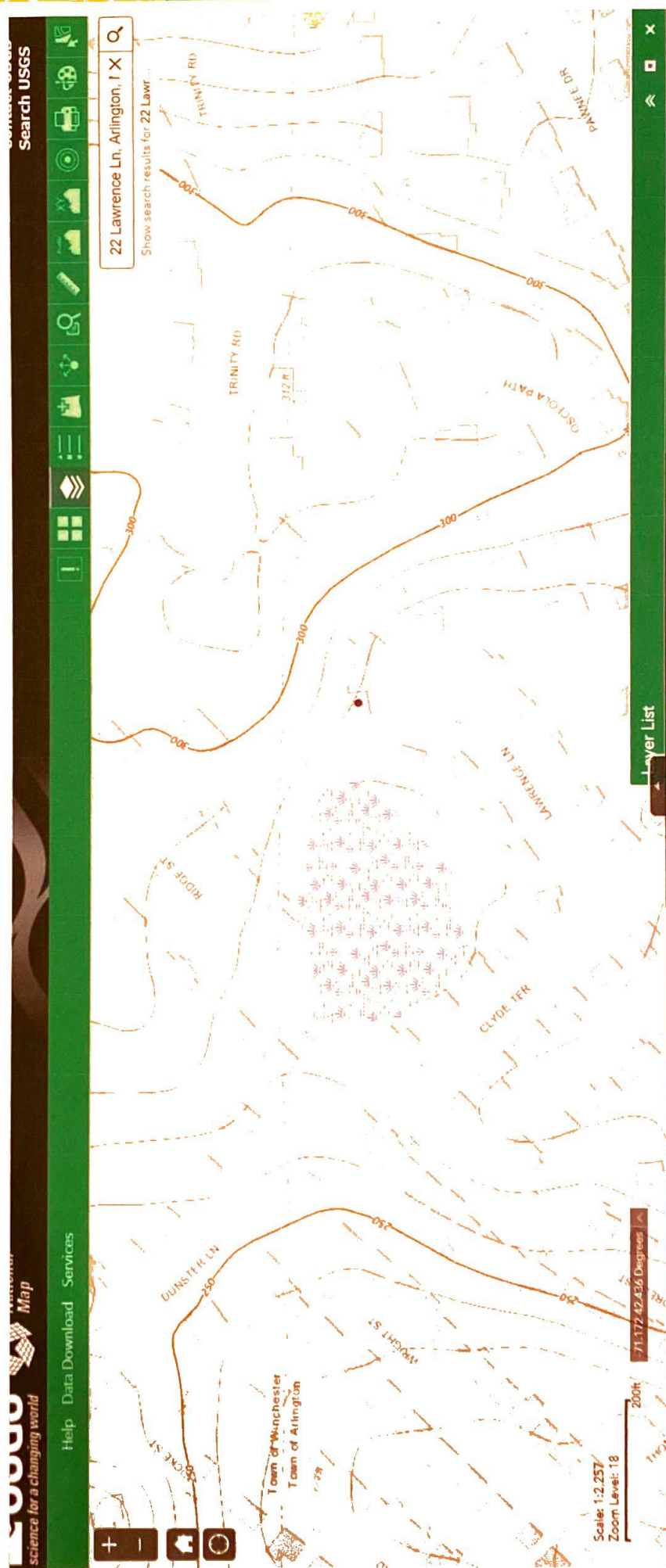
SPECIAL FLOOD HAZARD AREAS SUBJECT TO DILUTION
BY THE 1% ANNUAL CHANCE FLOOD

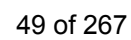
The 1% annual flood (100-year flood) is known as the base flood. It is the flood that has a 1% chance of being equaled or exceeded in any given year. The Federal Flood Insurance Act is the law that requires the Federal Government to provide flood insurance to property owners who are subject to flooding by the 1% annual flood. Areas of Special Flood Hazard are shown on maps of the 1% annual flood. The base flood elevation is the elevation of the 1% annual flood flood.

267



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| NFP NATIONAL FLOOD INSURANCE PROGRAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIRM FLOOD INSURANCE RATE MAP MIDDLESEX COUNTY, MASSACHUSETTS (ALL FLOOD ZONATIONS) | PANEL 418 OF 655 SEE MAP INDEX FOR PANEL NUMBER, LOCATION AND DATE <table border="1"> <tr> <td>DATE</td> <td>REVISION</td> <td>REASON</td> </tr> <tr> <td>10/1/83</td> <td>1</td> <td>INITIAL RELEASE</td> </tr> <tr> <td>10/1/83</td> <td>2</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>3</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>4</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>5</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>6</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>7</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>8</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>9</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>10</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>11</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>12</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>13</td> <td>REVISION</td> </tr> <tr> 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<td>10/1/83</td> <td>82</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>83</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>84</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>85</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>86</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>87</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>88</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>89</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>90</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>91</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>92</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>93</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>94</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>95</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>96</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>97</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>98</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>99</td> <td>REVISION</td> </tr> <tr> <td>10/1/83</td> <td>100</td> <td>REVISION</td> </tr> </table> | DATE | REVISION | REASON | 10/1/83 | 1 | INITIAL RELEASE | 10/1/83 | 2 | REVISION | 10/1/83 | 3 | REVISION | 10/1/83 | 4 | REVISION | 10/1/83 | 5 | REVISION | 10/1/83 | 6 | REVISION | 10/1/83 | 7 | REVISION | 10/1/83 | 8 | REVISION | 10/1/83 | 9 | REVISION | 10/1/83 | 10 | REVISION | 10/1/83 | 11 | REVISION | 10/1/83 | 12 | REVISION | 10/1/83 | 13 | REVISION | 10/1/83 | 14 | REVISION | 10/1/83 | 15 | REVISION | 10/1/83 | 16 | REVISION | 10/1/83 | 17 | REVISION | 10/1/83 | 18 | REVISION | 10/1/83 | 19 | REVISION | 10/1/83 | 20 | REVISION | 10/1/83 | 21 | REVISION | 10/1/83 | 22 | REVISION | 10/1/83 | 23 | REVISION | 10/1/83 | 24 | REVISION | 10/1/83 | 25 | REVISION | 10/1/83 | 26 | REVISION | 10/1/83 | 27 | REVISION | 10/1/83 | 28 | REVISION | 10/1/83 | 29 | REVISION | 10/1/83 | 30 | REVISION | 10/1/83 | 31 | REVISION | 10/1/83 | 32 | REVISION | 10/1/83 | 33 | REVISION | 10/1/83 | 34 | REVISION | 10/1/83 | 35 | REVISION | 10/1/83 | 36 | REVISION | 10/1/83 | 37 | REVISION | 10/1/83 | 38 | REVISION | 10/1/83 | 39 | REVISION | 10/1/83 | 40 | REVISION | 10/1/83 | 41 | REVISION | 10/1/83 | 42 | REVISION | 10/1/83 | 43 | REVISION | 10/1/83 | 44 | REVISION | 10/1/83 | 45 | REVISION | 10/1/83 | 46 | REVISION | 10/1/83 | 47 | REVISION | 10/1/83 | 48 | REVISION | 10/1/83 | 49 | REVISION | 10/1/83 | 50 | REVISION | 10/1/83 | 51 | REVISION | 10/1/83 | 52 | REVISION | 10/1/83 | 53 | REVISION | 10/1/83 | 54 | REVISION | 10/1/83 | 55 | REVISION | 10/1/83 | 56 | REVISION | 10/1/83 | 57 | REVISION | 10/1/83 | 58 | REVISION | 10/1/83 | 59 | REVISION | 10/1/83 | 60 | REVISION | 10/1/83 | 61 | REVISION | 10/1/83 | 62 | REVISION | 10/1/83 | 63 | REVISION | 10/1/83 | 64 | REVISION | 10/1/83 | 65 | REVISION | 10/1/83 | 66 | REVISION | 10/1/83 | 67 | REVISION | 10/1/83 | 68 | REVISION | 10/1/83 | 69 | REVISION | 10/1/83 | 70 | REVISION | 10/1/83 | 71 | REVISION | 10/1/83 | 72 | REVISION | 10/1/83 | 73 | REVISION | 10/1/83 | 74 | REVISION | 10/1/83 | 75 | REVISION | 10/1/83 | 76 | REVISION | 10/1/83 | 77 | REVISION | 10/1/83 | 78 | REVISION | 10/1/83 | 79 | REVISION | 10/1/83 | 80 | REVISION | 10/1/83 | 81 | REVISION | 10/1/83 | 82 | REVISION | 10/1/83 | 83 | REVISION | 10/1/83 | 84 | REVISION | 10/1/83 | 85 | REVISION | 10/1/83 | 86 | REVISION | 10/1/83 | 87 | REVISION | 10/1/83 | 88 | REVISION | 10/1/83 | 89 | REVISION | 10/1/83 | 90 | REVISION | 10/1/83 | 91 | REVISION | 10/1/83 | 92 | REVISION | 10/1/83 | 93 | REVISION | 10/1/83 | 94 | REVISION | 10/1/83 | 95 | REVISION | 10/1/83 | 96 | REVISION | 10/1/83 | 97 | REVISION | 10/1/83 | 98 | REVISION | 10/1/83 | 99 | REVISION | 10/1/83 | 100 | REVISION |
| DATE | REVISION | REASON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 3 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 4 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 5 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 6 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 7 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 8 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 9 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 14 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 15 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 16 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 17 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 18 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 19 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 20 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 22 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 23 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 24 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 25 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 26 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 27 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 28 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 29 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 30 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 31 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 32 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 33 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 34 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 35 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 36 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 37 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 38 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 39 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 40 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 41 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 42 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 43 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 44 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 45 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 46 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 47 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 48 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 49 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 50 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 51 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 52 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 53 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 54 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 55 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 56 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 57 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 58 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 59 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 60 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 61 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 68 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 72 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 73 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 76 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/83 | 79 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 80 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/1/83 | 81 | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | MAP NUMBER 28070418B EFFECTIVE DATE JUNE 4, 2010 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Federal Emergency Management Agency | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |







Astling Toys

- Wings Body
- Hair Line
- Wood Regulated Roller
- Birds
- Major Plan - Town Board
- Master Plan Base Map - S
- Plan - For City Budget
- Schools - Wide
- US Highway
- State Highway
- Pavement Surface - For B
- Road
- Street
- Street Ward
- Cemetery
- City
- For Large Scale &
- Scale - For Small Scale &
- Major Plan Base Map - M
- Major Plan Base Map - W
- Major Plan Base Map - W
- Boundary - City Bar



The title shown on this title card is provided for informational and searching purposes only. The title and its contents are not responsible for the accuracy or completeness of the data.

50 of 267

162 R

Printed on 06/25/2020 at 04:29 PM

Wetland and Flood GIS Viewer







Bylaw Filing Fees and Transmittal Form

Rules:

1. Fees are payable at the time of filing the application and are non-refundable.
2. Fees shall be calculated per schedule below.
3. Town, County, State, and Federal Projects are exempt from fees.
4. These fees are in addition to the fees paid under M.G.L. Ch. 131, s.40 (ACT).

Fee Schedule (ACC approved 1/8/15):

| \$ | No./Area | Category |
|-------|----------|---|
| \$150 | | (R1) RDA- \$150 local fee, no state fee |
| | | (N1) Minor Project - \$200 (house addition, tennis court, swimming pool, utility work, work in/on/or affecting any body of water, wetland or floodplain). |
| | | (N2) Single Family Dwelling - \$600 |
| | | (N3) Multiple Dwelling Structures - \$600 + \$100 per unit all or part of which lies within 100 feet of wetlands or within land subject to flooding. |
| | | (N4) Commercial, Industrial, and Institutional Projects - \$800 + 50¢/s.f. wetland disturbed; 2¢/s.f. land subject to flooding or buffer zone disturbed. |
| | | (N5) Subdivisions - \$600 + \$4/l.f. feet of roadway sideline within 100 ft. of wetlands or within land subject to flooding. |
| | | (N6) Other Fees - copies, printouts; per public records law |
| | | (N7) Minor Project Change - \$50 |
| | | (N8) Work on Docks, Piers, Revetments, Dikes, etc - \$4 per linear foot |
| | | (N9) Resource Boundary Delineation (ANRAD) - \$1 per linear foot |
| | | (N10) Certificate of Compliance (COC or PCOC) - No charge if before expiration of Order, \$200 if after that date. |
| | | (N11) Amendments - \$300 or 50% of original local filing fee, whichever is less. |
| | | (N12) Extensions - |
| | | a. Single family dwelling or minor project - \$100. |
| | | b. Other - \$150. |
| | | (N13) Consultant Fee -per estimate from consultant |
| \$150 | TOTAL | |

Note: Submit this form along with the forms submitted for the ACT - the "Wetlands Filing Fee Calculations Worksheet," and the "Notice of Intent Fee Transmittal Form."

Abutter Notification

Notification to Abutters Under the Massachusetts Wetlands Protection Act And Arlington Wetlands Protection Bylaw

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

The Conservation Commission will hold a virtual public meeting using Zoom, on Thursday, August 20, 2020, at 7:30 in accordance with the provisions of the Mass. Wetlands Protection Act (M.G.L. Ch. 131, s. 40, as amended), the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, and in accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, for a Request for Determination of Applicability from Brian and Kristin Hodous, for patio renovations and new porous deck at 22 Lawrence Lane, within 100 feet of a wetland. Please refer to the Commission's online meeting agenda for specific Zoom meeting access information.

A copy of the application and accompanying plans are available by request by contacting the Arlington Conservation Agent at 781-316-3012 or esullivan@town.arlington.ma.us. For more information call the applicant at 617-756-6967 or the Arlington Conservation Commission at 781-316-3012, or the DEP Northeast Regional Office at 978-694-3200.

NOTE: Notice of the Public Hearing will be published at least five (5) business days in advance in *The Arlington Advocate* and will also be posted at least 48 hours in advance in the Arlington Town Hall.

Affidavit of Service

(Please return to Conservation Commission)

I, Brian Hodous , being duly sworn, do hereby state as follows: on August 7, 2020, I mailed a "Notification to Abutters" in compliance with the second paragraph of Massachusetts General Laws, Chapter 131, s.40, the DEP Guide to Abutter Notification dated April 8, 1994, and the Arlington Wetlands Protection Bylaw, Title V, Article 8 of the Town of Arlington Bylaws in connection with the following matter:

- Work to be completed at 22 Lawrence Lane, Arlington, MA 02474.
- Build new wood framed deck supported on helical steel pier footings (approx. 22'x16'), with railings, integrated hot tub support platform and stairs to yard.
- Renovate the existing raised patio. Flagstone & cement slab removed and new modular concrete pavers resting on a porous compacted stone & sand based installed. Includes a short walkway from deck steps to side yard.
- Project will reduce the amount of impervious surface onsite by 231 square feet. The deck itself is porous and the patio base is going from solid concrete to porous stone pack and sand. This project considers climate change by reducing the amount of impervious surface and improving stormwater infiltration.

The form of the notification, and a list of the abutters to whom it was provided and their addresses, are attached to this Affidavit of Service.

Signed under the pains and penalties of perjury, this 04 day of Aug 2020.

Name





Office of the
Board of Assessors
Robbins Memorial Town Hall
Arlington, MA 02476
(781) 316-3050
Assessors@town.arlington.ma.us

Abutters List

Date: July 10, 2020

Subject Property Address: 22 LAWRENCE LN Arlington, MA
Subject Property ID: 108-2-9

Search Distance: 100 Feet

Please see enclosed map for any abutting property within 100 feet that is in another city or town.

The Board of Assessors certifies the names and addresses of requested parties in interest, all abutters within 100 feet of the property lines, of subject property.

Kenneth C. Freely
Robert E. Greeley
[Signature]

Board of Assessors

Abutters List

Date: July 10, 2020

Subject Property Address: 22 LAWRENCE LN Arlington,
MA

Subject Property ID: 108-2-9

Search Distance: 100 Feet

Prop ID: 108-2-9

Prop Location: 22 LAWRENCE LN Arlington, MA

Owner: HODOUS BRIAN L

Co-Owner: WILLIAMS KRISTIN

Mailing Address:

22 LAWRENCE LN

ARLINGTON, MA 02474

Prop ID: 108-2-10

Prop Location: 18 LAWRENCE LN Arlington, MA

Owner: LULL CHRISTINE E

Co-Owner:

Mailing Address:

18 LAWRENCE LANE

ARLINGTON, MA 02474

Prop ID: 108-2-11.A

Prop Location: 14 LAWRENCE LN Arlington, MA

Owner: O GRADY JOSEPH F & JANE R

Co-Owner:

Mailing Address:

14 LAWRENCE LANE

ARLINGTON, MA 02474

Prop ID: 108-2-22

Prop Location: 0-LOT FOREST ST Arlington, MA

Owner: SHANKS CAROLYN

Co-Owner:

Mailing Address:

9 RIDGE ST

WINCHESTER, MA 01890

Prop ID: 108-2-23

Prop Location: 0-LOT LAWRENCE LN Arlington, MA

Owner: TOWN OF ARLINGTON CON COM

Co-Owner:

Mailing Address:

730 MASS AVE

ARLINGTON, MA 02476

Prop ID: 108-2-7.A

Prop Location: 25 LAWRENCE LN Arlington, MA

Owner: MATHESON CAMERON R & ACACIA B

Co-Owner:

Mailing Address:

25 LAWRENCE LANE

ARLINGTON, MA 02474

Prop ID: 108-2-8.A

Prop Location: 26 LAWRENCE LN Arlington, MA

Owner: LANATA MARIE E

Co-Owner:

Mailing Address:

26 LAWRENCE LANE

ARLINGTON, MA 02474

Legal Notice Charge Authorization

DATE: 7/11/2020

TO: legals@wickedlocal.com

I hereby authorize Community Newspapers to bill me directly for the legal notice to be published in the Arlington Advocate newspaper on _____ for a public hearing with the Arlington Conservation Commission to review a project at the following location:

22 Lawrence Lane, Arlington, MA.

Thank you.

Signed: 

Send bill to:

Brian + Kristin Hodous (Address)
22 Lawrence Lane
Arlington, MA 02474
617-756-6967 (Phone)



Town of Arlington, Massachusetts

Request for Certificate of Compliance: Spy Pond Edge and Erosion Control Project

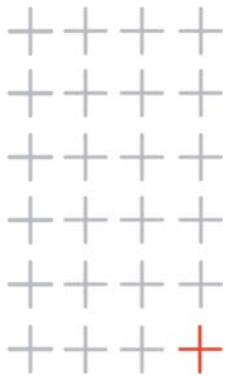
Summary:

Request for Certificate of Compliance: Spy Pond Edge and Erosion Control Project
MassDEP File #091-0299

The project as approved proposed shoreline stabilization and ecological restoration activities on the Town-owned properties located at Spy Pond Park, Scannell Field, and area west of the Boys and Girls Club in the 100-ft wetlands buffer and AURA of Spy Pond. The project was approved on 09/05/2018.

ATTACHMENTS:

| Type | File Name | Description |
|---------------------------------------|--|----------------------------|
| Request for Certificate of Compliance | Spy_Pond_COC_Request_Cover_Letter_2020-07-31.pdf | Spy Pond RCOC Cover Letter |
| Request for Certificate of Compliance | wpaform8a_Spy_Pond.pdf | Spy Pond RCOC WPA Form 8a |
| Request for Certificate of Compliance | Spy_Pond_Record_Plan_Set__2020.07.31-compressed.pdf | Spy Pond RCOC As-Built |
| Request for Certificate of Compliance | Spy_Pond_Shoreline_Erosion_Control_Project_-_wpaform5.pdf | Spy Pond OOC Part 1 |
| Request for Certificate of Compliance | Spy_Pond_Shoreline_Erosion_Control_Project_-_Findings_and_Special_Conditions.pdf | Spy Pond OOC Part 2 |
| Request for Certificate of Compliance | Final_NOI-combined.pdf | Spy Pond NOI |



July 31, 2020

Reference: H/355321/001

Arlington Conservation Commission
Town Hall, 730 Massachusetts Ave
Arlington, MA 02476

Subject: Request for Certificate of Compliance
Spy Pond Edge Protection & Erosion Control Project - OOC #091-0299

Dear Ms. Sullivan and Members of the Commission,

On behalf of the Arlington Parks and Recreation Commission, Hatch Associates Consultants, Inc. (Hatch) is submitting a request for certificate of compliance for the above referenced project pursuant to the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection for the completed shoreline stabilization and ecological restoration activities on the Town-owned properties located at Spy Pond Park, Scannell Field, and area west of the Boys and Girls Club.

The final construction substantially complies with the plans approved by the Commission under the associated Order of Conditions with the following deviations:

1. No work was completed at Spring Valley Street terminus.
2. No work was completed at the North Beach in Spy Pond Park.
3. Work associated with the south timber overlook (near Linwood Street) including path, regrading, and tree removals was removed from the project and not completed.
4. Removal of the existing chain-link fence and replacement with a new chain-link fence at Scannell Field fence was removed from project and not completed. The new meadow along the proposed chain-link fence was also not installed.
5. The length of the vegetated swale along Scannell Field was reduced by approximately 90 feet due to a conflict with existing below grade concrete foundations.
6. Additional regrading, installation of erosion control matting, and turf seeding was completed on the slope between the existing Minuteman Bikeway and the new porous pavement path in Spy Pond Park.
7. New park fence on each side of the existing stone overlooks and the new overlook was not installed, instead additional shrub plantings were installed.
8. There were field modifications to the coir fascine design at the shoreline of Spy Pond Park and Scannell Field. At some locations 20" diameter coir fascine was used instead of single and stacked 12" diameter coir fascines. At several locations at Scannell Field, coir fascines were not installed due to large tree roots or boulders that are providing shoreline protection.
9. At the area west of Boys & Girls Club, the concrete flare end section was not installed at the existing 12" outfall pipe at the direction of the Town Engineer. The western limit of coir fascine was pulled

back and reduced to accommodate a buried 18" outfall pipe that was found. This change was also made at the direction of the Town Engineer.

Enclosed please find a digital copy of the WPA Form 8A and the Record Plan Set.

If the Commission requires clarification or additional information regarding this request for COC, please contact me at (978)-224-3131 or at hilary.holmes@hatch.com.

Respectfully,

A handwritten signature in black ink, reading "Hilary G. Holmes". The signature is written in a cursive, flowing style.

HATCH

Hilary Holmes, PE
Senior Civil Engineer

Cc: Joseph Connelly, Recreation Director



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number:

WPA Form 8A – Request for Certificate of Compliance

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by DEP

A. Project Information

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Upon completion of the work authorized in an Order of Conditions, the property owner must request a Certificate of Compliance from the issuing authority stating that the work or portion of the work has been satisfactorily completed.

1. This request is being made by:

Arlington Park and Recreation Commission

Name

422 Summer Street

Mailing Address

Arlington

City/Town

781-316-3880

Phone Number

MA

State

02474

Zip Code

2. This request is in reference to work regulated by a final Order of Conditions issued to:

Arlington Park and Recreation Commission

Applicant

9/5/2018

Dated

091-0299

DEP File Number

3. The project site is located at:

Spy Pond

Street Address

9-3-1, 9-3-3, 9-4-1, 121-6-2

Assessors Map/Plat Number

Arlington

City/Town

Parcel/Lot Number

4. The final Order of Conditions was recorded at the Registry of Deeds for:

Town of Arlington Parks

Property Owner (if different)

Middlesex South

County

71761

Book

134

Page

Certificate (if registered land)

5. This request is for certification that (check one):

☒ the work regulated by the above-referenced Order of Conditions has been satisfactorily completed.

☐ the following portions of the work regulated by the above-referenced Order of Conditions have been satisfactorily completed (use additional paper if necessary).

☐ the above-referenced Order of Conditions has lapsed and is therefore no longer valid, and the work regulated by it was never started.

A. Project Information (cont.)



WPA Form 8A – Request for Certificate of Compliance

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by DEP

6. Did the Order of Conditions for this project, or the portion of the project subject to this request, contain an approval of any plans stamped by a registered professional engineer, architect, landscape architect, or land surveyor?

☒ Yes

If yes, attach a written statement by such a professional certifying substantial compliance with the plans and describing what deviation, if any, exists from the plans approved in the Order.

☐ No

B. Submittal Requirements

Requests for Certificates of Compliance should be directed to the issuing authority that issued the final Order of Conditions (OOC). If the project received an OOC from the Conservation Commission, submit this request to that Commission. If the project was issued a Superseding Order of Conditions or was the subject of an Adjudicatory Hearing Final Decision, submit this request to the appropriate DEP Regional Office (see <http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html>).

SPY POND EDGE & EROSION CONTROL PROJECT

RECORD SET

JULY 31, 2020

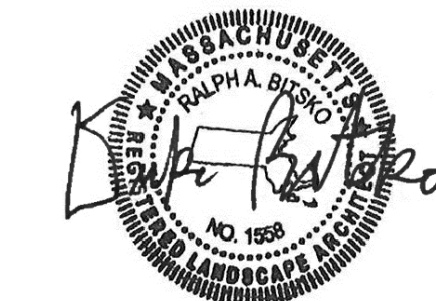
HATCH

27 Congress Street, Salem, MA 01970
tel. 978-740-0096 www.hatch.com

Client/Owner:

Town of Arlington Park &
Recreation Commission
422 Summer St.
Arlington, MA 02474

Stamp:



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
RECORD SET

Project:

Job Number:

H-355321

Date:

July 31, 2020

Drawn By:

A. Keel

Designed By:

H. Holmes, G. Johnson

Reviewed By:

D. Bitko

Revisions

Number: Description: Date:

Sheet Title:

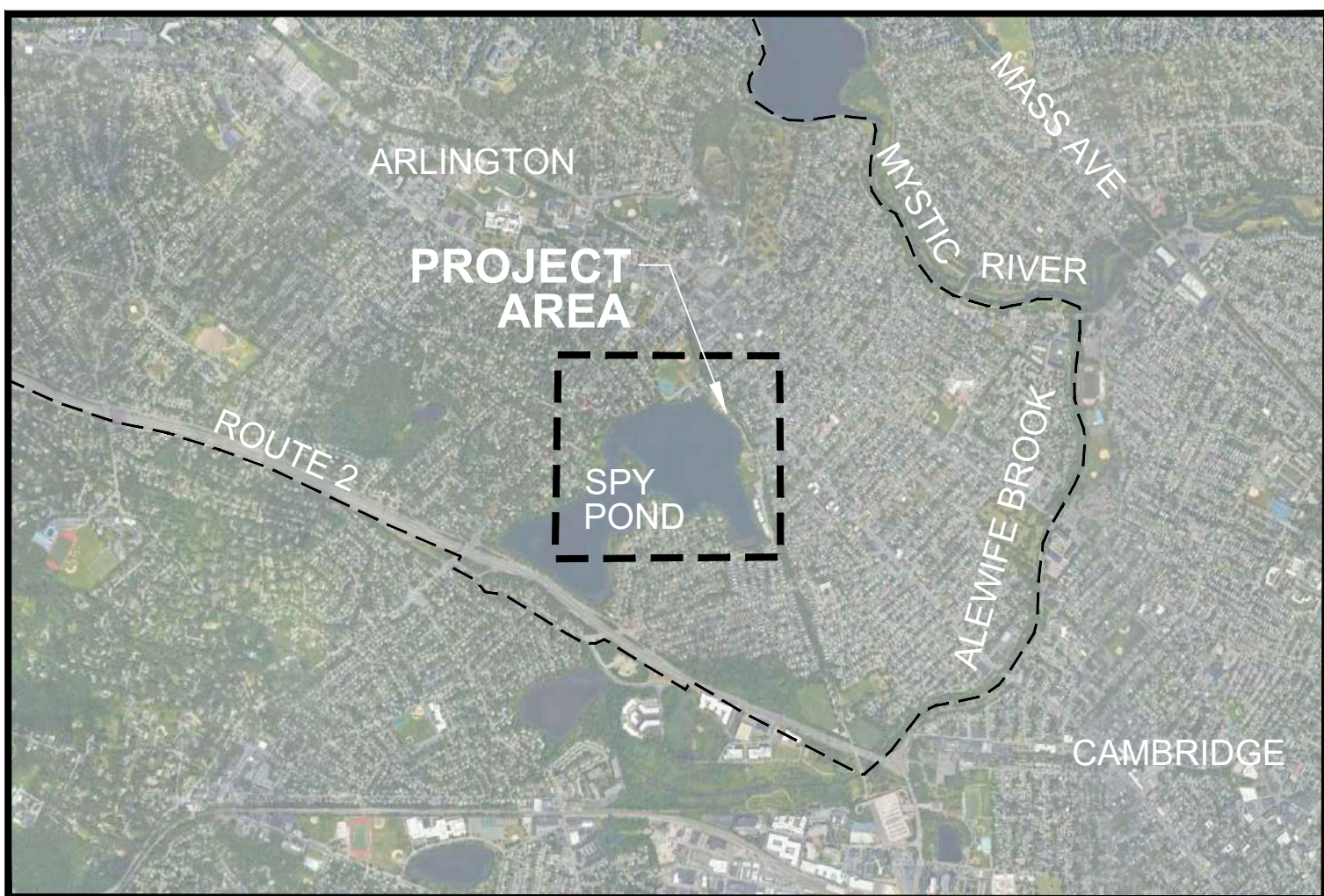
COVER SHEET

Sheet No:

PROJECT LOCATION PLAN



SITE LOCUS PLAN - ARLINGTON



SCALE: NTS

PROJECT DESCRIPTION

THE ARLINGTON PARK AND RECREATION COMMISSION AND ITS PARTNERS WISH TO MITIGATE EROSION AND PRESERVE PORTIONS OF PUBLIC SHORELINE AT SPY POND IN A MANNER THAT IMPROVES ECOLOGICAL STRUCTURE AND FUNCTION WHILE MEETING THE FOLLOWING GOALS:

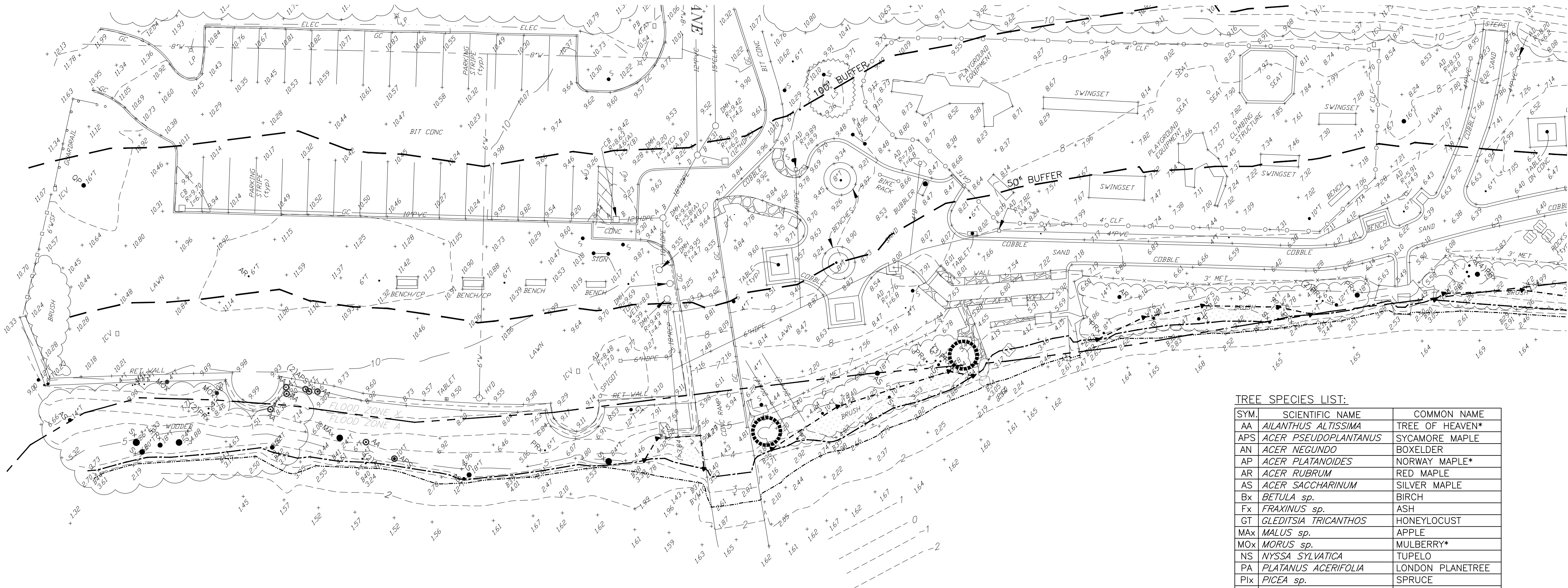
- PRESERVE, STABILIZE AND STRENGTHEN APPROXIMATELY 1,500 LF OF SHORELINE TO SUSTAIN AND ENHANCE THE POND'S ECOLOGICAL HEALTH
- IDENTIFY AND CONTROL SOURCES OF EROSION ALONG THE BANKS OF THE POND
- PROTECT AND ENHANCE WILDLIFE HABITAT BY PROTECTING THE POND'S NATURAL EDGES WITH BIOENGINEERING TECHNIQUES
- CONTROL ACCESS TO THE VEGETATED BUFFER AREAS TO PREVENT UNAUTHORIZED PATHS ALONG THE SHORELINE
- INCREASE RECREATIONAL QUALITY AND OPPORTUNITY FOR WATER USE ALONG THE POND SHORELINE
- INCREASE STORMWATER INFILTRATION ALONG THE SHORELINE

DRAWING INDEX

| SHEET NO. | SHEET TITLE |
|-------------|---|
| - | COVER SHEET |
| EC-1 & EC-2 | EXISTING CONDITIONS & RESOURCE AREA PLANS |
| SP-1 & SP-2 | SITE PREPARATION PLANS |
| L-1 & L-2 | SITE PLANS |
| L-3 | TIMBER OVERLOOK ENLARGEMENT PLAN & SECTIONS |
| L-4 TO L-9 | SITE DETAILS |



0 100' 200' 300'
SCALE: 1"=100'



AREA 1: SPY POND PARK (NORTH)

SCALE: 1" = 20'-0"



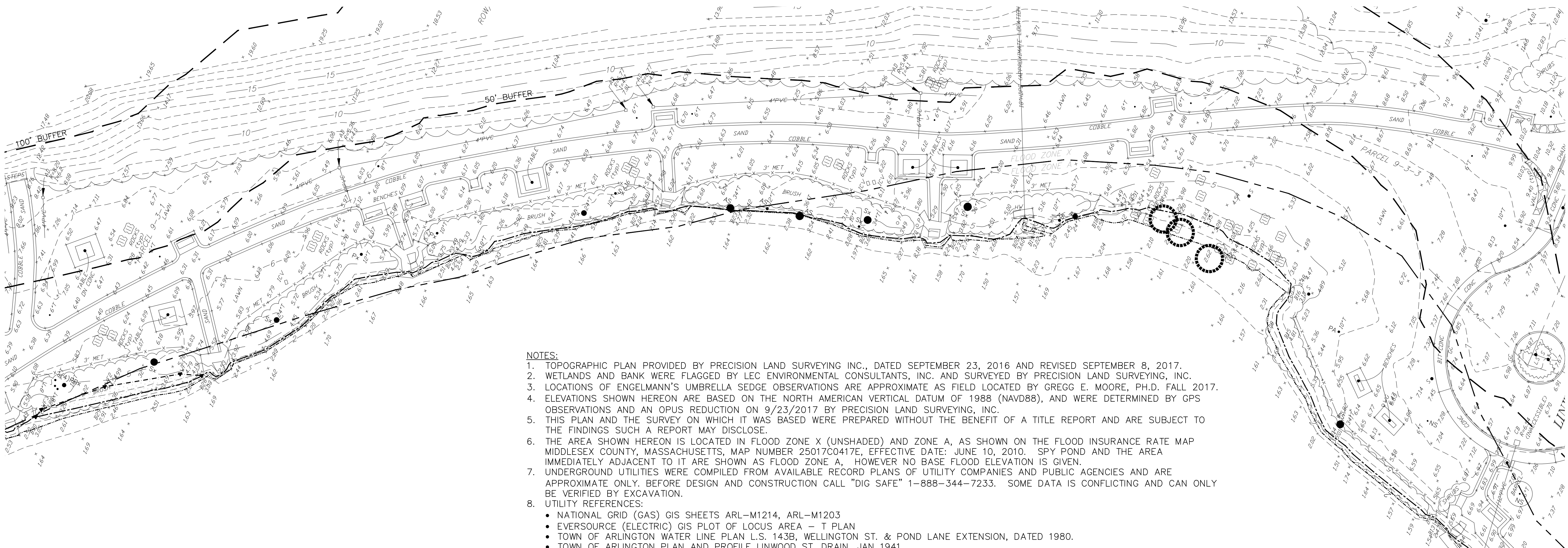
TREE SPECIES LIST:

| SYM. | SCIENTIFIC NAME | COMMON NAME |
|------|------------------------------|------------------|
| AA | <i>AILANTHUS ALTISSIMA</i> | TREE OF HEAVEN* |
| APS | <i>ACER PSEUDOPLANITANUS</i> | SYCAMORE MAPLE |
| AN | <i>ACER NEGUNDO</i> | BOXELDER |
| AP | <i>ACER PLATANOIDES</i> | NORWAY MAPLE* |
| AR | <i>ACER RUBRUM</i> | RED MAPLE |
| AS | <i>ACER SACCHARINUM</i> | SILVER MAPLE |
| Bx | <i>BETULA sp.</i> | BIRCH |
| Fx | <i>FRAXINUS sp.</i> | ASH |
| GT | <i>GLEDTISIA TRICANTHOS</i> | HONEYLOCUST |
| MAX | <i>MALUS sp.</i> | APPLE |
| MOx | <i>MORUS sp.</i> | MULBERRY* |
| NS | <i>NYSSA SYLVATICA</i> | TUPELO |
| PA | <i>PLATANUS ACERIFOLIA</i> | LONDON PLANETREE |
| Pix | <i>PICEA sp.</i> | SPRUCE |
| POx | <i>POPULUS sp.</i> | ASPEN, POPLAR |
| PRx | <i>PRUNUS sp.</i> | CHERRY |
| QP | <i>QUERCUS PALUSTRIS</i> | PIN OAK |
| Ox | <i>QUERCUS sp.</i> | OAK |
| RP | <i>ROBINIA PSEUDOACACIA</i> | BLACK LOCUST* |
| Sx | <i>SALIX sp.</i> | WILLOW |
| Ux | <i>ULMUS sp.</i> | ELM |

* INVASIVE SPECIES

0 20' 40' 60'

- LEGEND:
- AD BIT CONC
 - BOT BOTTOM
 - BR BIKE RACK
 - CB CATCH BASIN
 - CLF CHAIN LINK FENCE
 - CONC CONCRETE
 - DMH DRAIN MANHOLE
 - FA FIRE ALARM
 - GC GRANITE CURB
 - GW GUY WIRE
 - HW HEADWALL
 - HYD HYDRANT
 - I= INVERT=
 - ICV IRRIGATION CONTROL VALVE
 - LP LIGHT POLE
 - LS LANDSCAPING
 - MC METAL COVER
 - MET METAL
 - MH MANHOLE
 - N.P.V. NO PIPES VISIBLE
 - P POST
 - PB PULL BOX
 - R= RIM=
 - RCP REINFORCED CONCRETE PIPE
 - S SIGN
 - UP UTILITY POLE
 - WG WATER GATE
 - WSF WOOD STOCKADE FENCE
 - 12" T 12" TREE
 - Handicapped Parking
 - Overhead Wires
 - Water Line
 - DRAIN LINE
 - GRADE CONTOUR
 - PROPERTY LINE
 - EDGE OF WATER AT TIME OF SURVEY
 - FEMA FLOOD ZONE LINE
 - LIMIT OF BORDERING
 - VEGETATED WETLAND
 - BORDERING VEGETATED WETLAND
 - BANK
 - BUFFER ZONE
 - BANK (B) & WETLAND (WF) FLAGS
 - Cyperus engelmannii LOCATION (OBSERVED OCTOBER 2017)



AREA 2: SPY POND PARK (SOUTH)

SCALE: 1" = 20'-0"



NOTES:

- TOPOGRAPHIC PLAN PROVIDED BY PRECISION LAND SURVEYING INC., DATED SEPTEMBER 23, 2016 AND REVISED SEPTEMBER 8, 2017.
- WETLANDS AND BANK WERE FLAGGED BY LEC ENVIRONMENTAL CONSULTANTS, INC. AND SURVEYED BY PRECISION LAND SURVEYING, INC.
- LOCATIONS OF ENGELMANN'S UMBRELLA SEDGE OBSERVATIONS ARE APPROXIMATE AS FIELD LOCATED BY GREGG E. MOORE, PH.D. FALL 2017.
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88), AND WERE DETERMINED BY GPS OBSERVATIONS AND AN OPUS REDUCTION ON 9/23/2017 BY PRECISION LAND SURVEYING, INC.
- THIS PLAN AND THE SURVEY ON WHICH IT WAS BASED WERE PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND ARE SUBJECT TO THE FINDINGS SUCH A REPORT MAY DISCLOSE.
- THE AREA SHOWN HEREON IS LOCATED IN FLOOD ZONE X (UNSHADED) AND ZONE A, AS SHOWN ON THE FLOOD INSURANCE RATE MAP MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 25017C0417E, EFFECTIVE DATE: JUNE 10, 2010. SPY POND AND THE AREA IMMEDIATELY ADJACENT TO IT ARE SHOWN AS FLOOD ZONE A, HOWEVER NO BASE FLOOD ELEVATION IS GIVEN.
- UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. BEFORE DESIGN AND CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.
- UTILITY REFERENCES:
 - NATIONAL GRID (GAS) GIS SHEETS ARL-M1214, ARL-M1203
 - EVERSOURCE (ELECTRIC) GIS PLOT OF LOCUS AREA - T PLAN
 - TOWN OF ARLINGTON WATER LINE PLAN L.S. 143B, WELLINGTON ST. & POND LANE EXTENSION, DATED 1980.
 - TOWN OF ARLINGTON PLAN AND PROFILE LINWOOD ST. DRAIN, JAN 1941.
 - TOWN OF ARLINGTON STORM DRAIN PLAN IN WELLINGTON STREET, JULY 1950.
 - TOWN OF ARLINGTON SHEETS L1 & L2, CONTRACT #2633, SPY POND PARK DATED 10/13/1992 BY PRESSLEY ASSOCIATES

HATCH

27 Congress Street, Salem, MA 01970
tel. 978-740-0096 www.hatch.com

Client/Owner:

Town of Arlington Park &
Recreation Commission
422 Summer St.
Arlington, MA 02474

Stamp:



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
RECORD SET

Project:

Job Number:

H-355321

Date:

July 31, 2020

Drawn By:

A.Keel

Designed By:

Reviewed By:

H. Holmes, D.Bitsko

Revisions

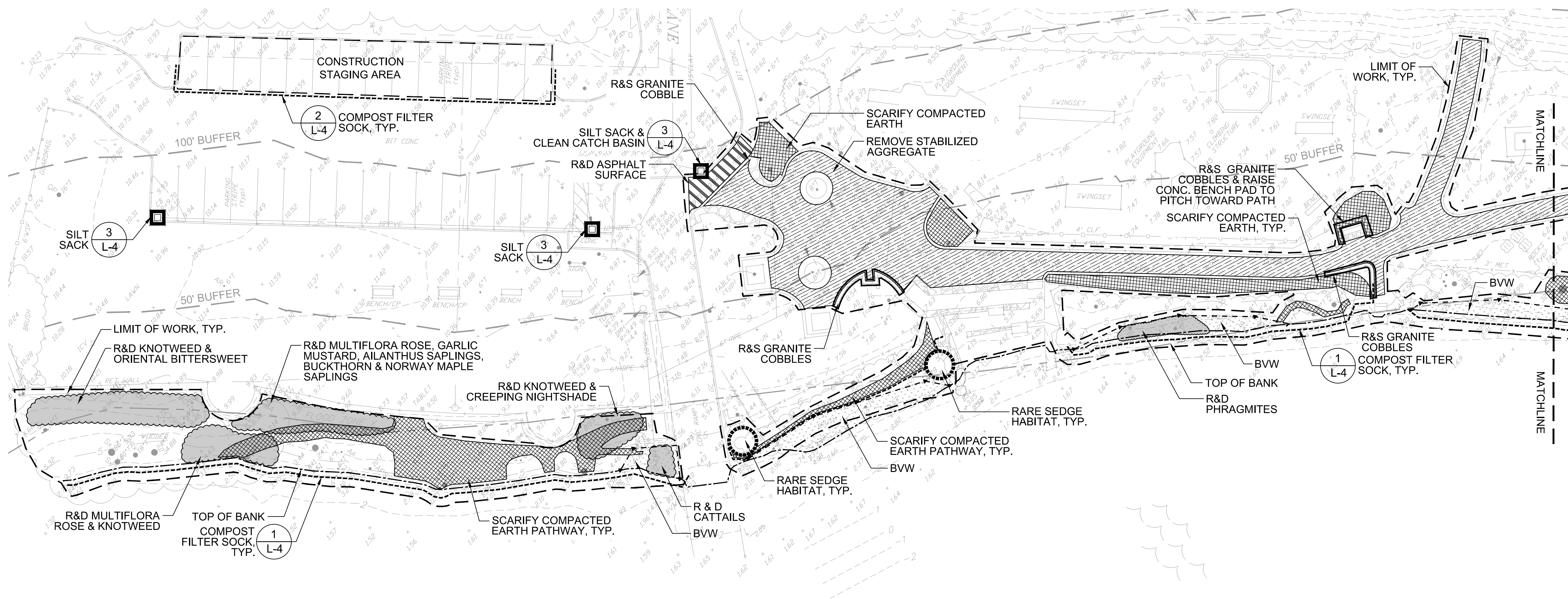
Number: Description: Date:

Sheet Title:

EXISTING CONDITIONS
& RESOURCE AREAS
PLAN

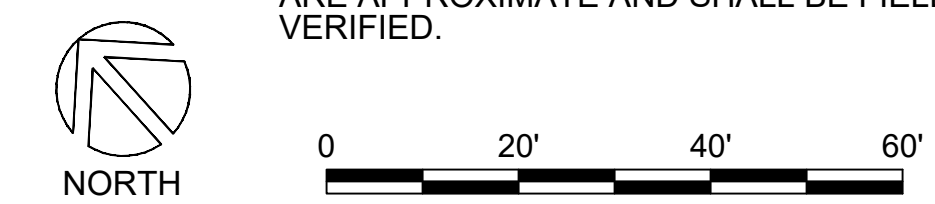
Sheet No:

EC-1



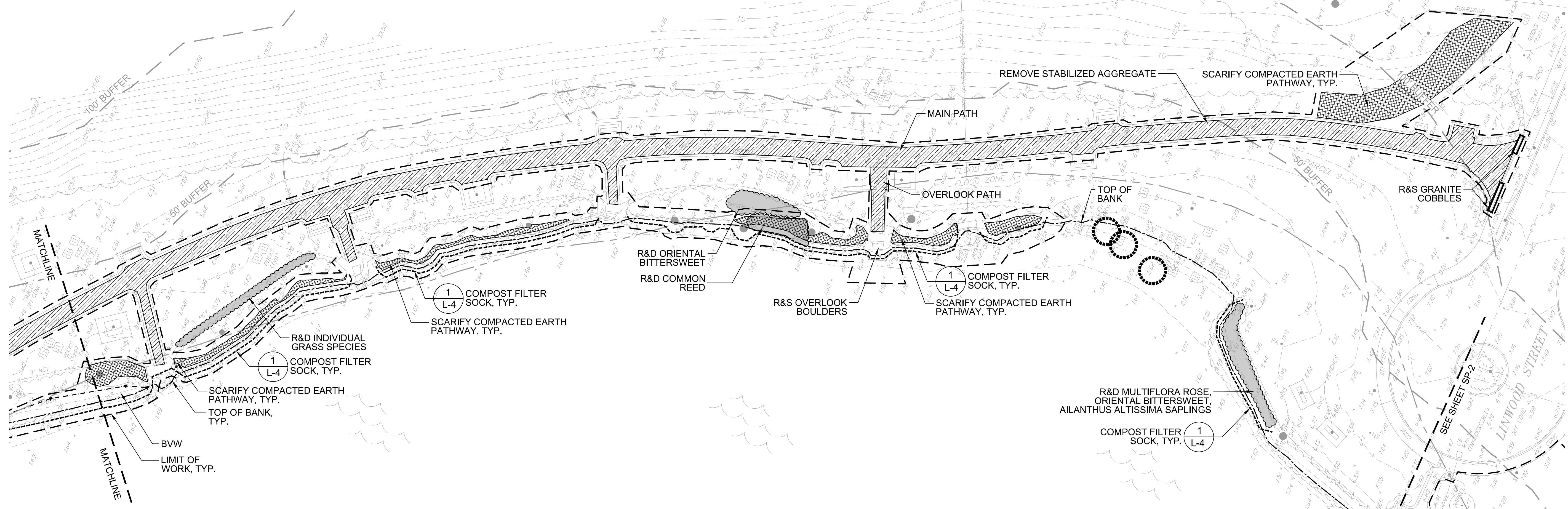
- LEGEND**
- PROPERTY LINE
 - LIMIT OF WORK
 - TOP OF BANK
 - BORDERING VEGETATED WETLAND (BVW)
 - LIMIT OF 50'/100' BUFFER ZONE
 - FEMA FLOOD ZONE X LINE
 - COMPOST FILTER SOCK
 - REMOVE ASPHALT SURFACE
 - REMOVE STABILIZED AGGREGATE
 - SCARIFY COMPACTED EARTH PATH
 - INVASIVE PLANT REMOVAL
 - CYPERUS ENGELMANNII (OBSERVED OCT. 2017)
 - INLET PROTECTION
 - GRANITE COBBLE TO BE STOCKPILED
 - R&D REMOVE & DISPOSE OF
 - R&S REMOVE & STOCKPILE (SALVAGE)

- NOTES:**
1. SPY POND WATER ELEVATION SHALL BE LOWERED TO ELEVATION 2.0 FT NAVD 88 PRIOR TO COMMENCEMENT OF ANY COIR FASCINE RELATED CONSTRUCTION ACTIVITIES. CONTACT ARLINGTON DPW TO COORDINATE WATER ELEVATION LEVEL.
 2. EROSION CONTROL FABRIC SHALL BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER WHERE SOILS ARE BEING REGRADED AND/OR SCARIFIED.
 3. LIMITS OF INVASIVE SPECIES REMOVAL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.



AREA 1: SPY POND PARK (NORTH)

SCALE: 1" = 20'-0"



AREA 2: SPY POND PARK (SOUTH)

SCALE: 1" = 20'-0"

Stamp:



Project:

ED

Job Number:

H-355321

Date:

July 31, 2020

Drawn By:

A. Keel

Designed By:

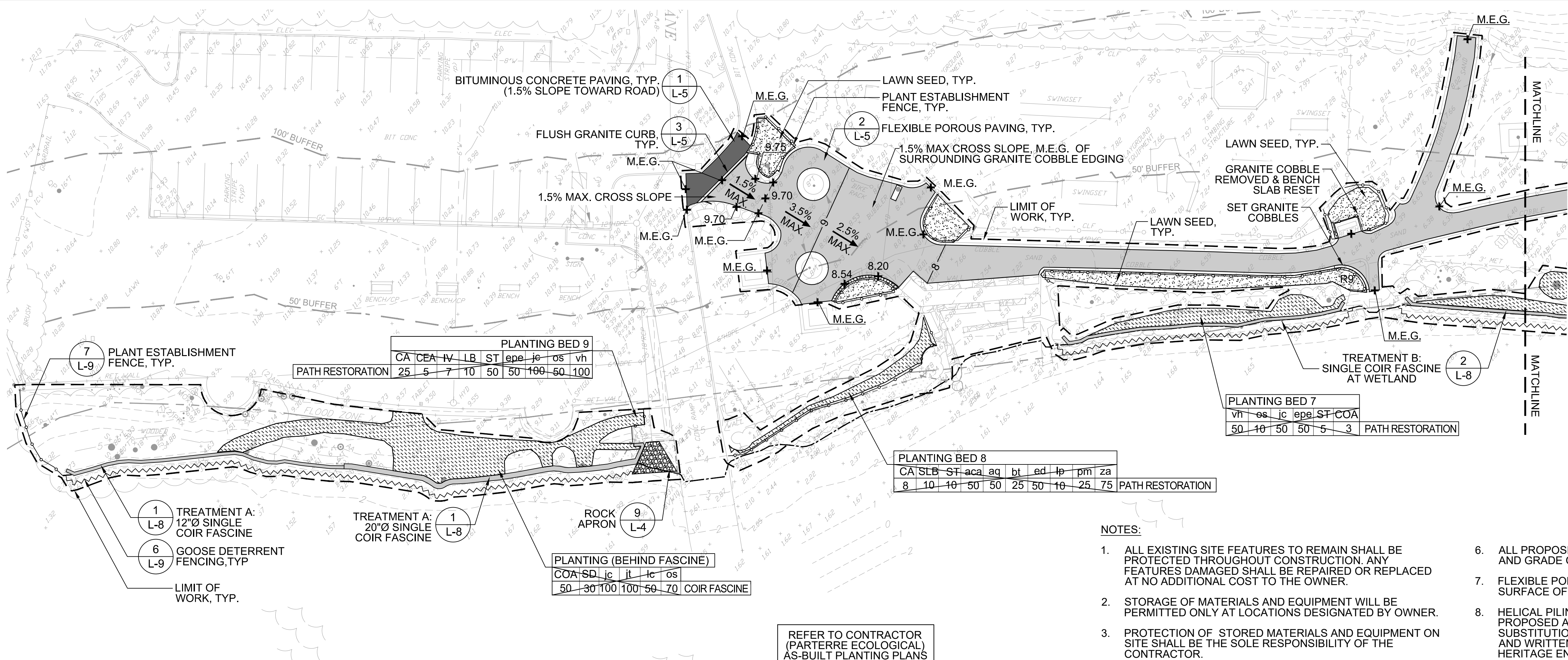
H. Holmes

Reviewed By:

H. Holmes, D.Bitsko

Revisions

| Number: | Description: | Date: |
|---------|--------------|-------|
| | | |
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| | | |

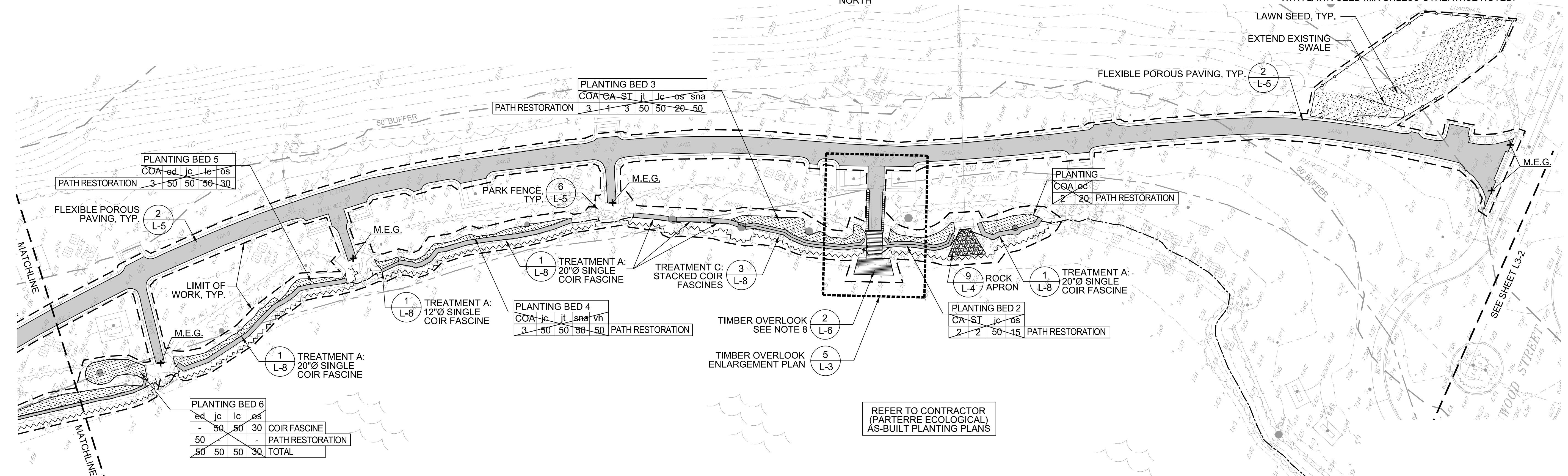


- LEGEND**
- PROPERTY LINE
 - LIMIT OF WORK
 - BITUMINOUS CONCRETE PAVING
 - FLEXIBLE POROUS PAVING
 - FLUSH GRANITE CURB
 - RESET GRANITE COBBLE
 - ROCK APRON
 - DOUBLE COIR FASCINE
 - SINGLE COIR FASCINE
 - TIMBER GUIDERAIL
 - PLANT ESTABLISHMENT FENCE (4' HT.)
 - GOOSE DETERRENT FENCING
 - PLANTING AREA
 - MEADOW SEED MIX
 - TALL TURF SEED MIX
 - LAWN SEED MIX

- NOTES:**
- ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT CONSTRUCTION. ANY FEATURES DAMAGED SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
 - STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED ONLY AT LOCATIONS DESIGNATED BY OWNER.
 - PROTECTION OF STORED MATERIALS AND EQUIPMENT ON SITE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 - CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON SITE AND REPORT ANY DISCREPANCIES IMMEDIATELY TO OWNER'S REPRESENTATIVE.
 - FLEXIBLE POROUS PAVEMENT SUBGRADE SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION OF FLEXIBLE POROUS PAVEMENT SURFACING.
 - ALL PROPOSED PAVING SURFACES SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
 - FLEXIBLE POROUS PAVING MATERIAL SHALL MEET TOP SURFACE OF BENCH FOOTINGS IN ALL LOCATIONS (2).
 - HELICAL PILINGS FOR TIMBER OVERLOOKS (2) ARE PROPOSED AND SHOWN IN DETAIL ON SHEET L-6. NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE REVIEW AND WRITTEN AUTHORIZATION GRANTED BY THE NATURAL HERITAGE ENDANGERED SPECIES PROGRAM (NHESP) REPRESENTATIVES, MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE (508.389.6360).
 - ALL UTILITY GRATES AND COVERS EXPOSED AT GRADE SHALL BE FLUSH WITH ADJACENT FINISHED GRADE.
 - WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, GRADE TRANSITION SHALL BE BLENDED SMOOTHLY.
 - CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH LAWN SEED MIX UNLESS OTHERWISE NOTED.

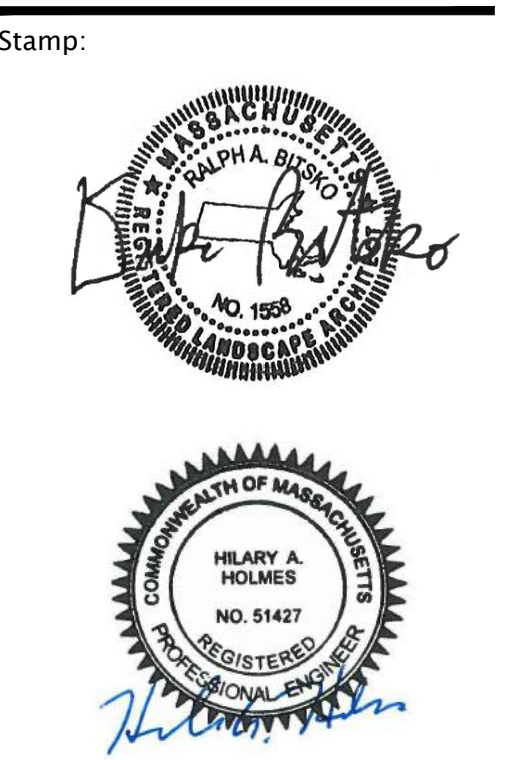
AREA 1: SPY POND PARK (NORTH)

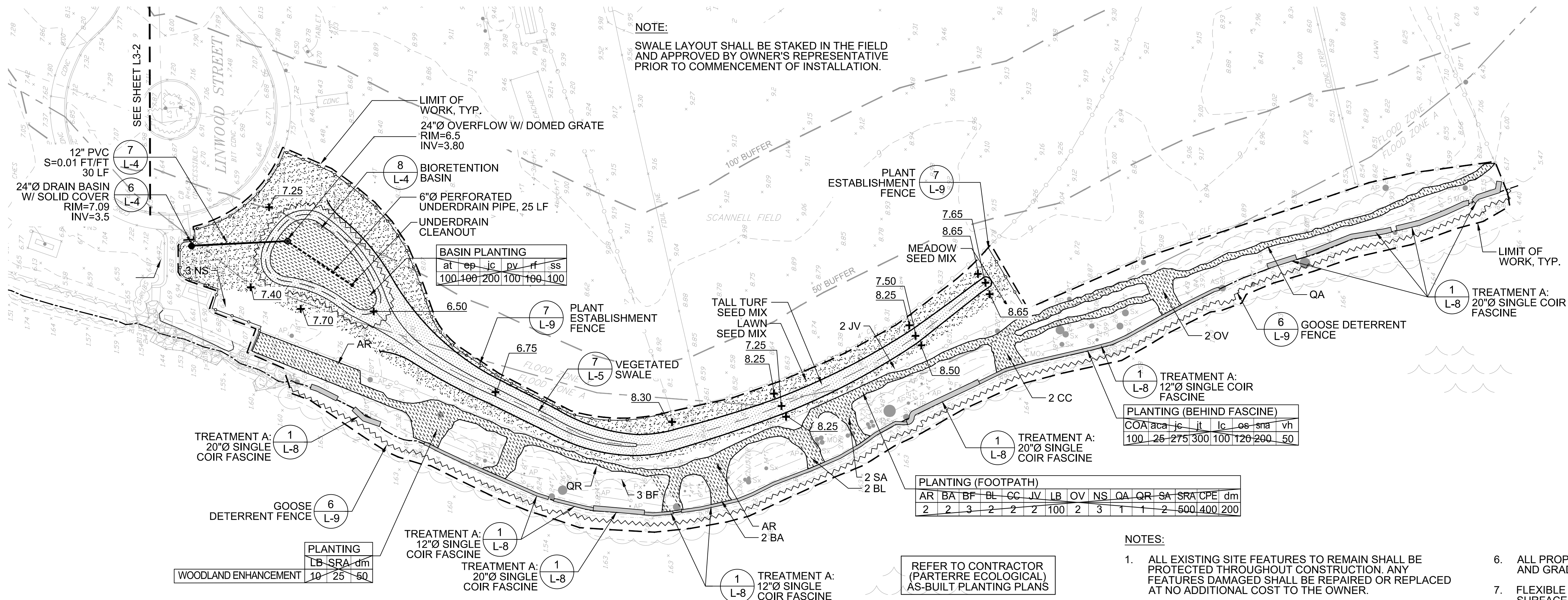
SCALE: 1" = 20'-0"



AREA 1: SPY POND PARK (SOUTH)

SCALE: 1" = 20'-0"





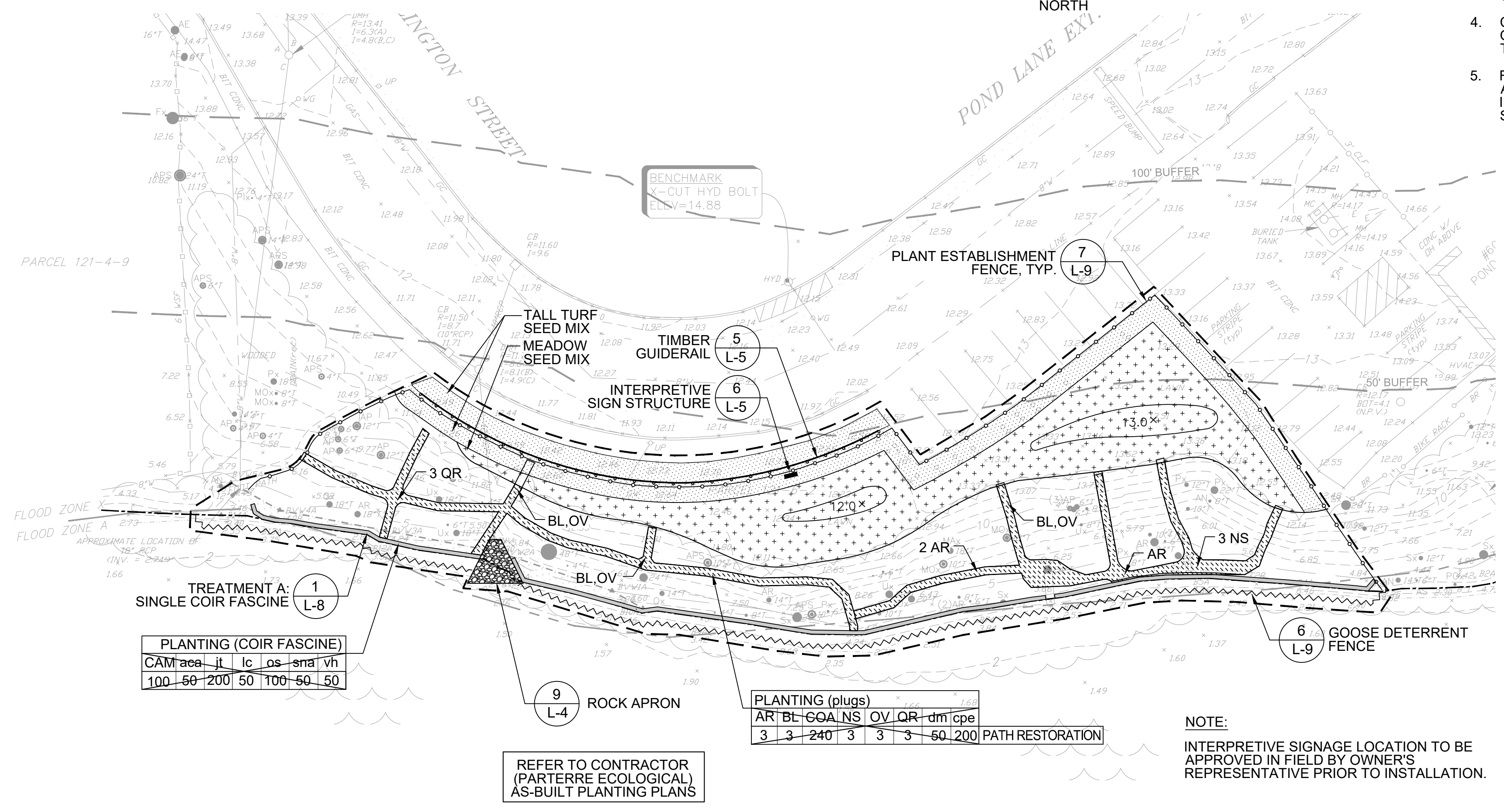
LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- BITUMINOUS CONCRETE PAVING
- FLEXIBLE POROUS PAVING
- FLUSH GRANITE CURB
- RESET GRANITE COBBLE
- ROCK APRON
- DOUBLE COIR FASCINE
- SINGLE COIR FASCINE
- TIMBER GUIDERAIL
- PLANT ESTABLISHMENT FENCE (4' HT.)
- GOOSE DETERRENT FENCING
- PLANTING AREA
- MEADOW SEED MIX
- TALL TURF SEED MIX
- LAWN SEED MIX

NOTES:

- ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT CONSTRUCTION. ANY FEATURES DAMAGED SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED ONLY AT LOCATIONS DESIGNATED BY OWNER.
- PROTECTION OF STORED MATERIALS AND EQUIPMENT ON SITE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON SITE AND REPORT ANY DISCREPANCIES IMMEDIATELY TO OWNER'S REPRESENTATIVE.
- FLEXIBLE POROUS PAVEMENT SUBGRADE SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION OF FLEXIBLE POROUS PAVEMENT SURFACING.
- ALL PROPOSED PAVING SURFACES SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
- FLEXIBLE POROUS PAVING MATERIAL SHALL MEET TOP SURFACE OF BENCH FOOTINGS IN ALL LOCATIONS (2).
- HELICAL PILINGS FOR TIMBER OVERLOOKS (2) ARE PROPOSED AND SHOWN IN DETAIL ON SHEET L-6. NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE REVIEW AND WRITTEN AUTHORIZATION GRANTED BY THE NATURAL HERITAGE ENDANGERED SPECIES PROGRAM (NHESP) REPRESENTATIVES, MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE (508.389.6360).
- ALL UTILITY GRATES AND COVERS EXPOSED AT GRADE SHALL BE FLUSH WITH ADJACENT FINISHED GRADE.
- WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, GRADE TRANSITION SHALL BE BLENDED SMOOTHLY.
- CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH LAWN SEED MIX UNLESS OTHERWISE NOTED.

AREA 2: SCANNELL FIELD
SCALE: 1" = 20'-0"



AREA 3: BOYS AND GIRLS CLUB
SCALE: 1" = 20'-0"

Client/Owner:
Town of Arlington Park & Recreation Commission
422 Summer St.
Arlington, MA 02474



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
RECORD SET

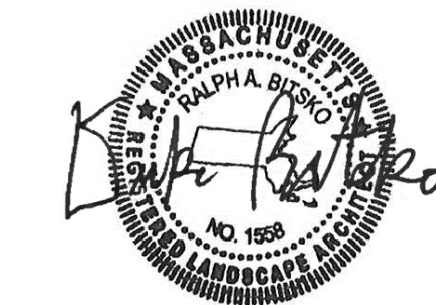
Project:
Job Number:
H-355321
Date:
July 31, 2020
Drawn By:
A.Keel
Designed By:
H.Holmes, B.Neville, G.Johnson
Reviewed By:
D.Bitsko
Revisions
Number: Description: Date:
Sheet Title:

SITE PLAN
Sheet No:

Client/Owner:

Town of Arlington Park &
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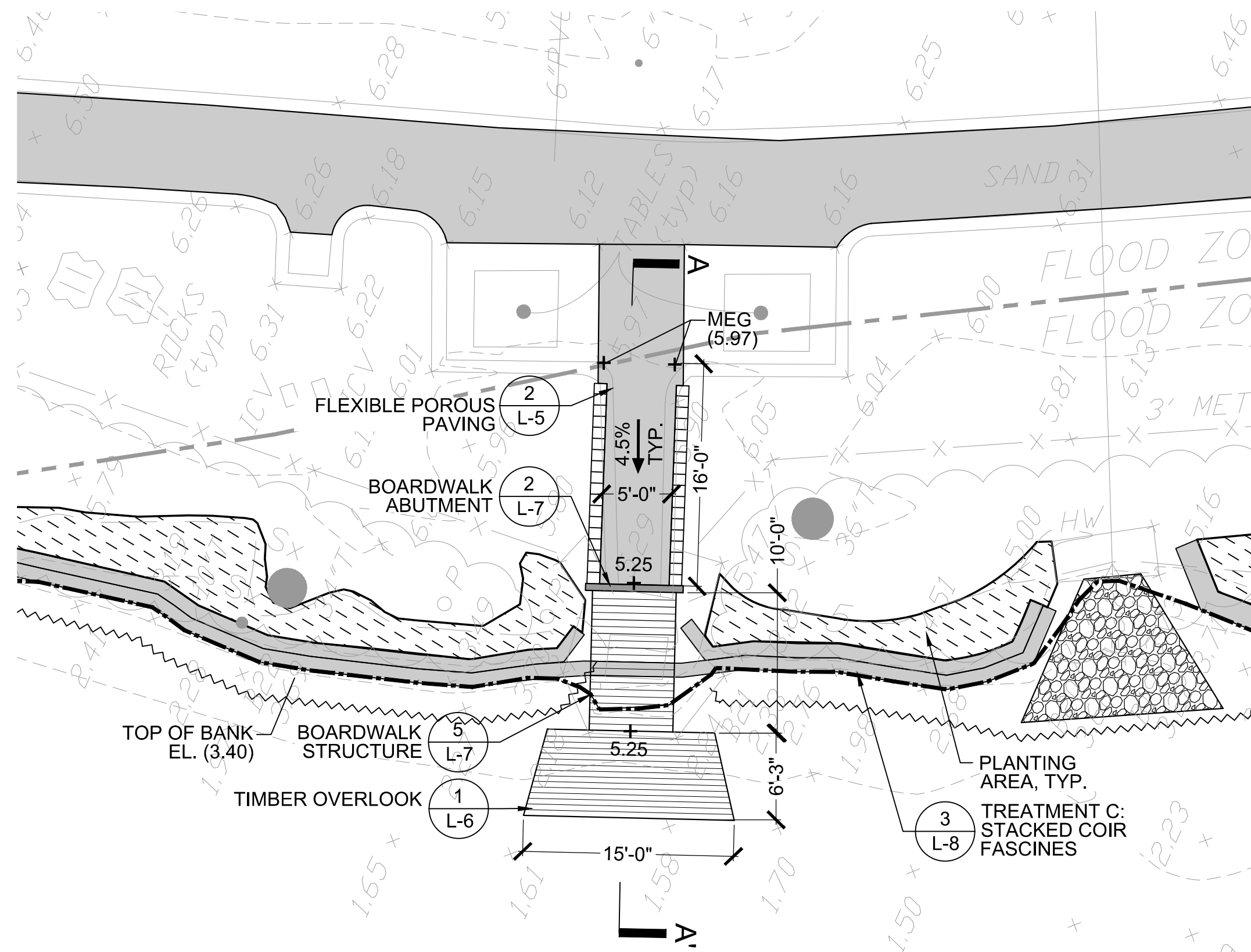
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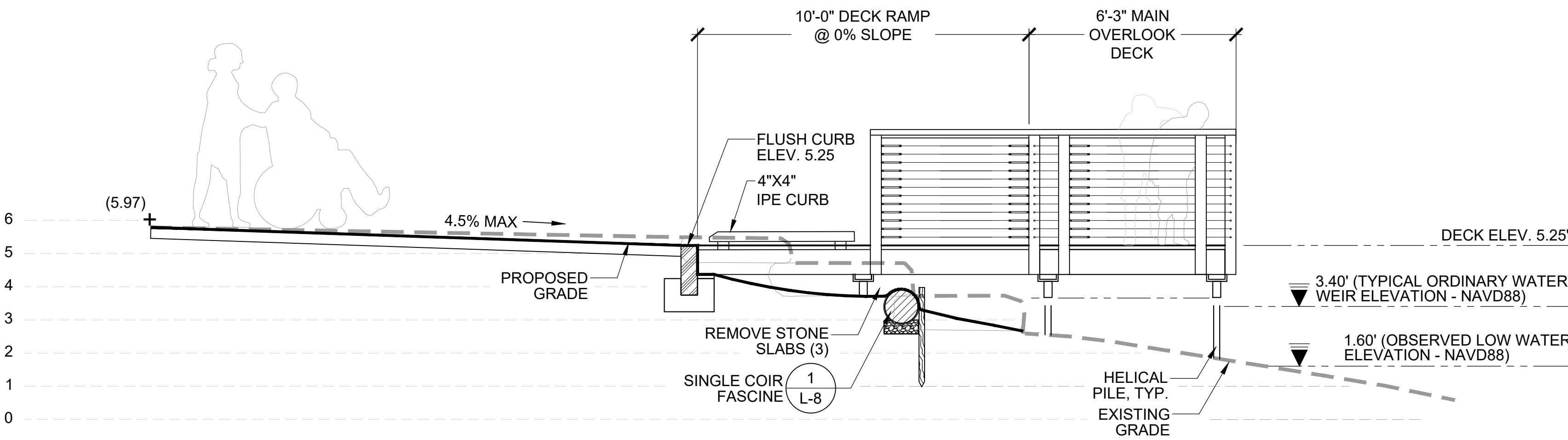
TIMBER OVERLOOK
ENLARGEMENT PLANS &
SECTIONS

Sheet No:

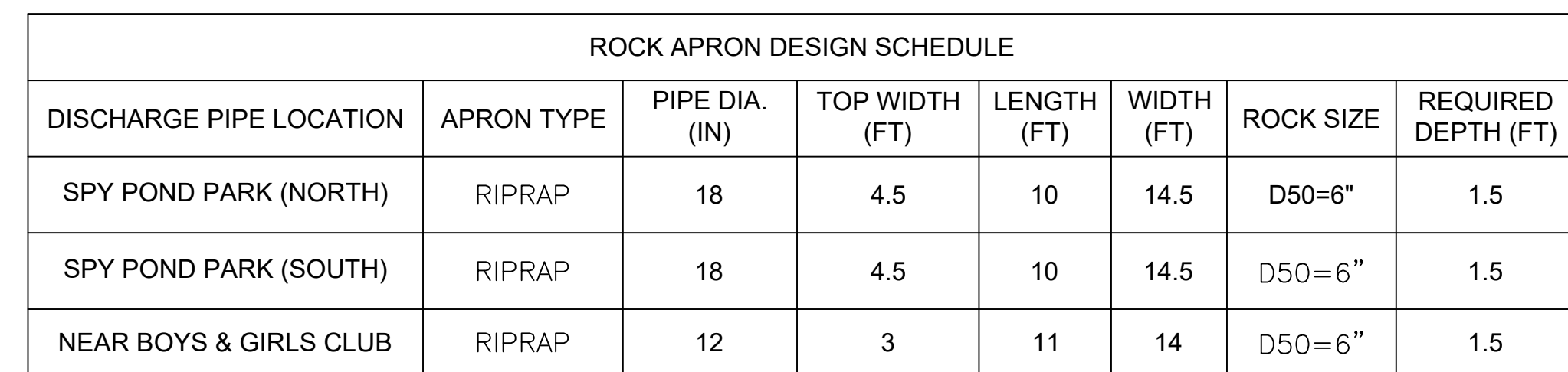
L-3



2 TIMBER OVERLOOK ENLARGEMENT PLAN (NORTH)
SCALE: 1/8" = 1'-0"



1 TIMBER OVERLOOK SECTION A-A' (NORTH)
SCALE: 3/8" = 1'-0"



6" KEY TRENCH, TYP.

SEE L-2 FOR DIMENSIONS

OVERFLOW STRUCTURE WITH DOMED GRATE, SEE PLAN FOR SIZE

SEE SHEET L-2 FOR PLANTING

2" MULCH

FINISH GRADE

6 OZ. NON-WOVEN GEOTEXTILE FABRIC

BIORETENTION SOIL

3/4" PEA GRAVEL DOUBLE-WASHED

3/4" CRUSHED STONE DOUBLE-WASHED

UNDISTURBED SUBGRADE

6" Ø PERFORATED UNDERDRAIN, SEALED CAP WITH 1" ORIFICE (SEE NOTES)

3/4" COMPACTED CRUSHED STONE

1'-3"

2"

10"

6"

2"

1'-0"

6"

NOTE:

1. TOTAL EXTENSION ON UNDERDRAIN AND CAP ASSEMBLY INTO INLET TO BE 3" FROM INLET WALL TO END OF CAP. 1" ORIFICE TO BE DRILLED IN CAP.
2. CAP SHALL BE ADS PRODUCT FC POS 06 0000 END PLUG WITH GASKET (OR APPROVED EQUIVALENT). UNDERDRAIN EXTENSION SHALL BE DUAL WALL CLEANOUT ADS 0674AG (OR APPROVED EQUIVALENT).

LANDSCAPED AREA, SEE SHEETS L-1/L-2

SHEATHING AS DIRECTED

COMPACTED BACKFILL/COMMON FILL (EARTH) (NOTE 3)

12" MIN. COMPACTED BACKFILL (SAND) (SEE NOTE 2)

3/4" CRUSHED STONE COMPACTED BEDDING

O.D.

12" MIN.

COMPACTED SUBGRADE

NOTE:

1. COMPACT BACKFILL IN 12" LIFTS.
2. BACKFILL MATERIAL FOR THIS ZONE SHALL CONTAIN STONES NO LARGER THAN 3 INCHES IN DIAMETER.
3. BACKFILL MATERIAL FOR THIS ZONE SHALL CONTAIN STONES NO LARGER THAN 6 INCHES IN DIAMETER.

24" STANDARD DUCTILE IRON FRAME & COVER

FINISH GRADE

24"Ø NYLOPLAST-ADS DRAIN BASIN OR EQUAL

COMPACTED BACKFILL / COMMON FILL (EARTH)

6" MIN.

6" MIN.

¾" CRUSHED STONE

Diagram illustrating the installation of a stainless steel expansion band and a flexible rubber connector on a concrete trunk line or manhole wall.

Labels and components shown:

- SERVICE PIPE
- STAINLESS STEEL PIPE CLAMP
- STAINLESS STEEL EXPANSION BAND
- CONCRETE TRUNK LINE OR MANHOLE WALL
- FLEXIBLE RUBBER CONNECTOR

Dimension: $D > 24"$

Diagram illustrating a tree protection zone. The diagram shows a tree with a drip line, a plastic mesh fence supported by posts, and a root protection zone. Callouts specify pruning requirements, mesh attachment, post spacing, and root protection.

- ANY REQUIRED PRUNING SHALL BE BY QUALIFIED ARBORIST PER ANSI A300. DISPOSE OF PRUNING WASTE AS DIRECTED BY OWNER'S REPRESENTATIVE
- PLASTIC MESH, ATTACH BY STAPLING TO WOOD POSTS, OR WIRING TO METAL POSTS
- 2" x 2" x 6' POSTS @ 5' O.C. MAX
- EXISTING GRADE
- PROTECT ROOT SYSTEMS FROM DAMAGE, COMPACTION, CONTAMINATION, FILL, AND EXCAVATION

NOTES:

- STATUS OF ALL TREES TO BE FIELD VERIFIED BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- INSTALL TREE PROTECTION FENCE PRIOR TO START OF CONSTRUCTION AND REMOVE UPON COMPLETION PRIOR TO SEEDING.

The diagrams illustrate the installation and components of the temporary inlet sediment filter:

- INSTALLATION DETAIL:** Shows the filter assembly being lowered into a trench. Labels include: DUMP STRAP (2 EACH), SILT SACK, EXPANSION RESTRAINT (1/4" NYLON ROPE, 2" FLAT WASHERS).
- TEMPORARY INLET SEDIMENT FILTER SECTION VIEW:** Shows a cross-section of the filter assembly. Labels include: POLYPROPYLENE "BOOT", GRATE, CATCH BASIN, OVERFLOW.
- ISOMETRIC VIEW:** Shows the filter assembly in a 3D perspective. Labels include: DUMP STRAP, SILT SACK.

Diagram illustrating the installation of a compost filter sock in plan view. The diagram shows a cross-section of a stream or ditch with a compost filter sock placed across it. The sock is secured by stakes on a 10' lineal spacing. The area upstream of the sock is labeled "AREA TO BE PROTECTED". The area downstream of the sock is labeled "WORK AREA". An arrow indicates "WATER FLOW" direction. The sock is labeled "COMPOST FILTER SOCK".

EL. 3.40' (TYPICAL
ORDINARY WATER, WEIR
ELEVATION - NAVD88)

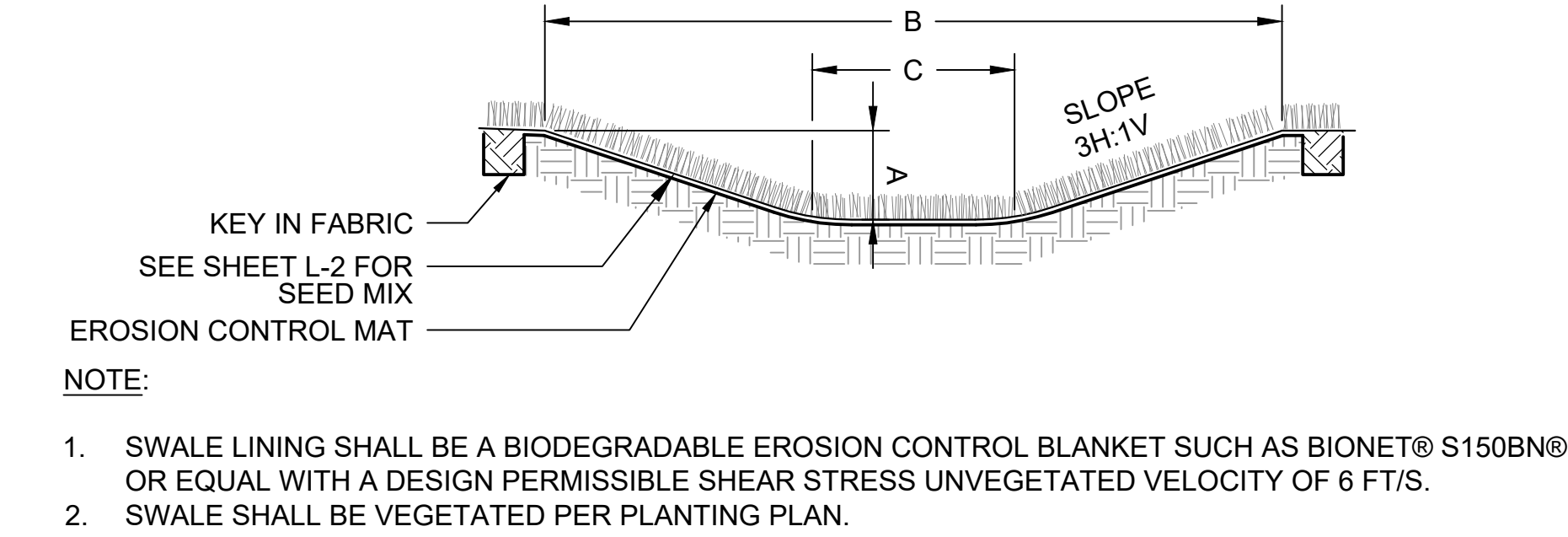
6 L-9 GOOSE DETERRENT
FENCE

2 L-4 COMPOST
FILTER SOCK

36"

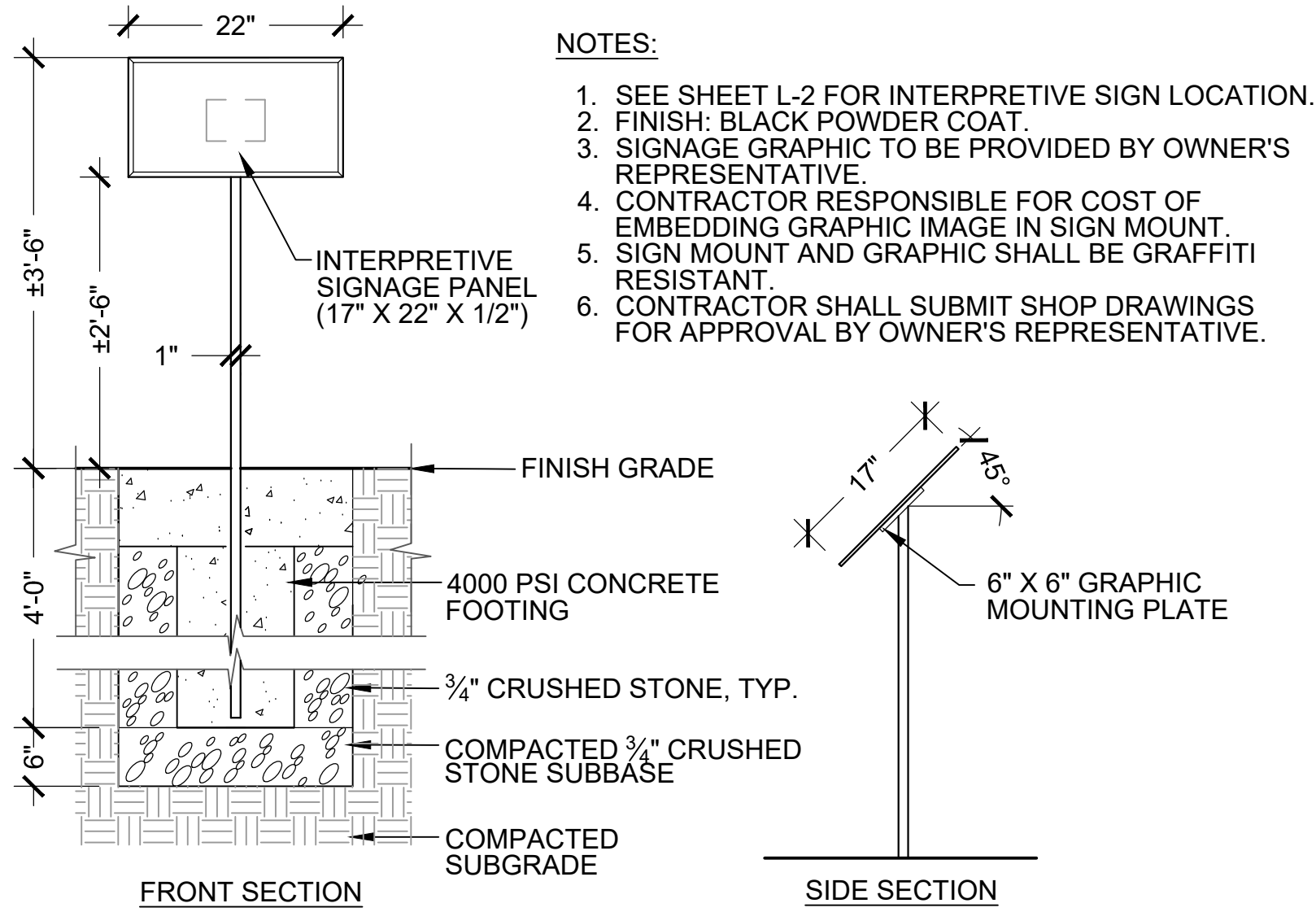
1-3 L-8 COIR FASCINE
TREATMENTS

NOTE:
ELEVATION OF SPY POND TO BE DRAWN DOWN TO 2.0 FT
NAVD 88 PRIOR TO COMMENCEMENT OF ANY COIR
FASCINE RELATED CONSTRUCTION ACTIVITIES.

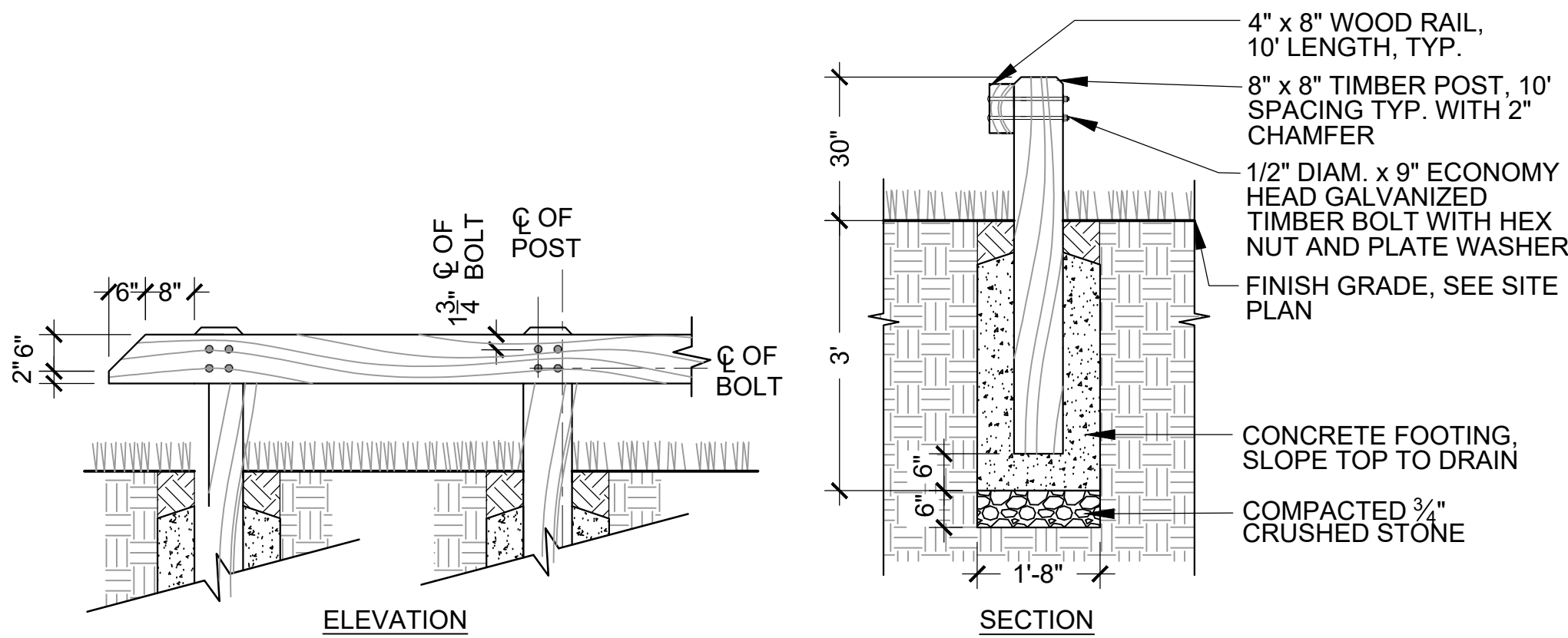


| SWALE DESIGN SCHEDULE | | | | | |
|-----------------------|-------------|---------------|----------------------|--------------------------|------------------------|
| SWALE LOCATION | LENGTH (FT) | SLOPE (FT/FT) | A MIN. DEPTH (FT) | B MIN. TOP WIDTH (FT) | C BOTTOM WIDTH (FT) |
| SCANNELL FIELD | 230 | 0.005 | VARIES, SEE PLAN | VARIES, SEE PLAN | 1.0 |

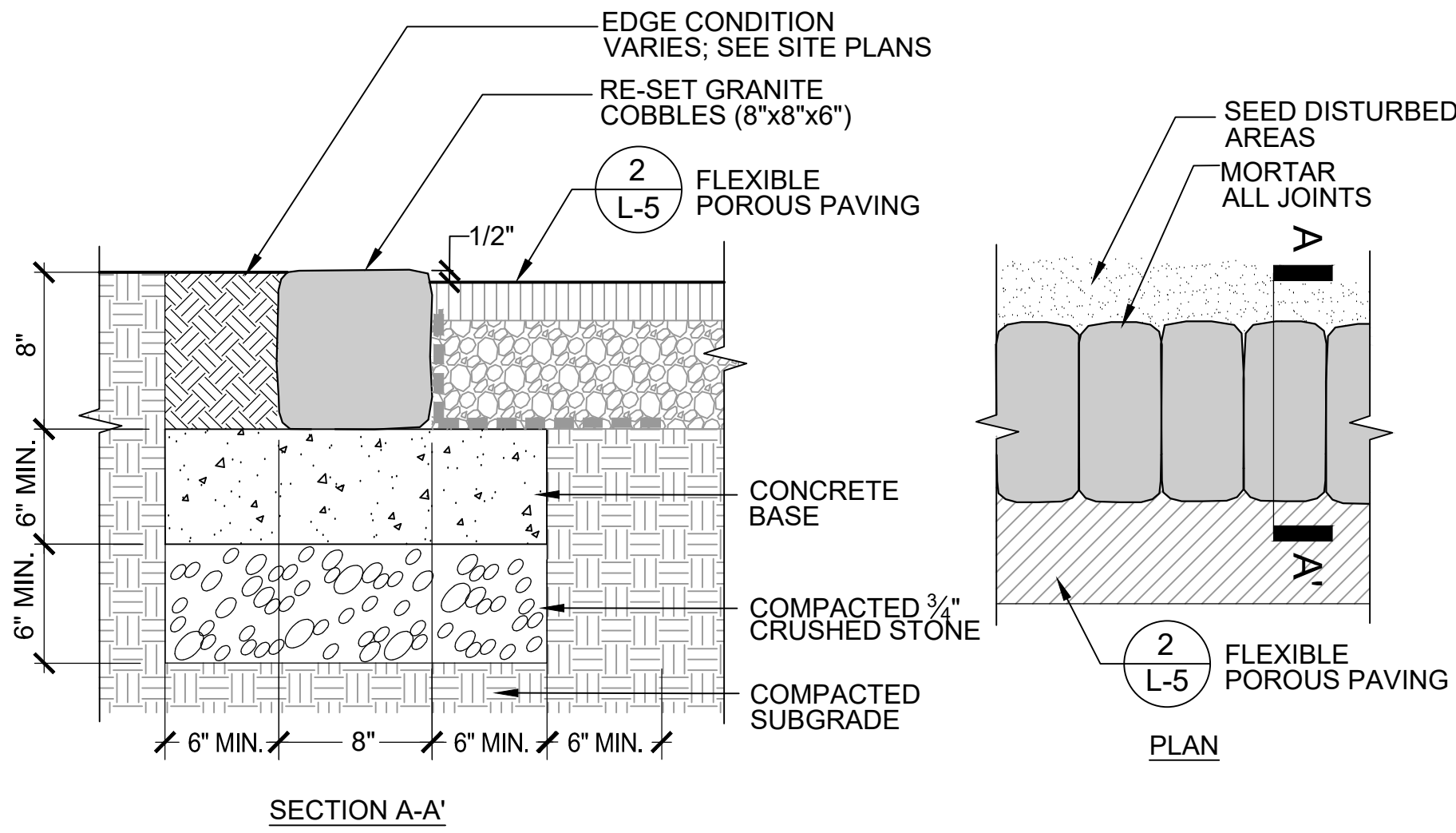
7 **VEGETATED SWALE**
SCALE: NTS



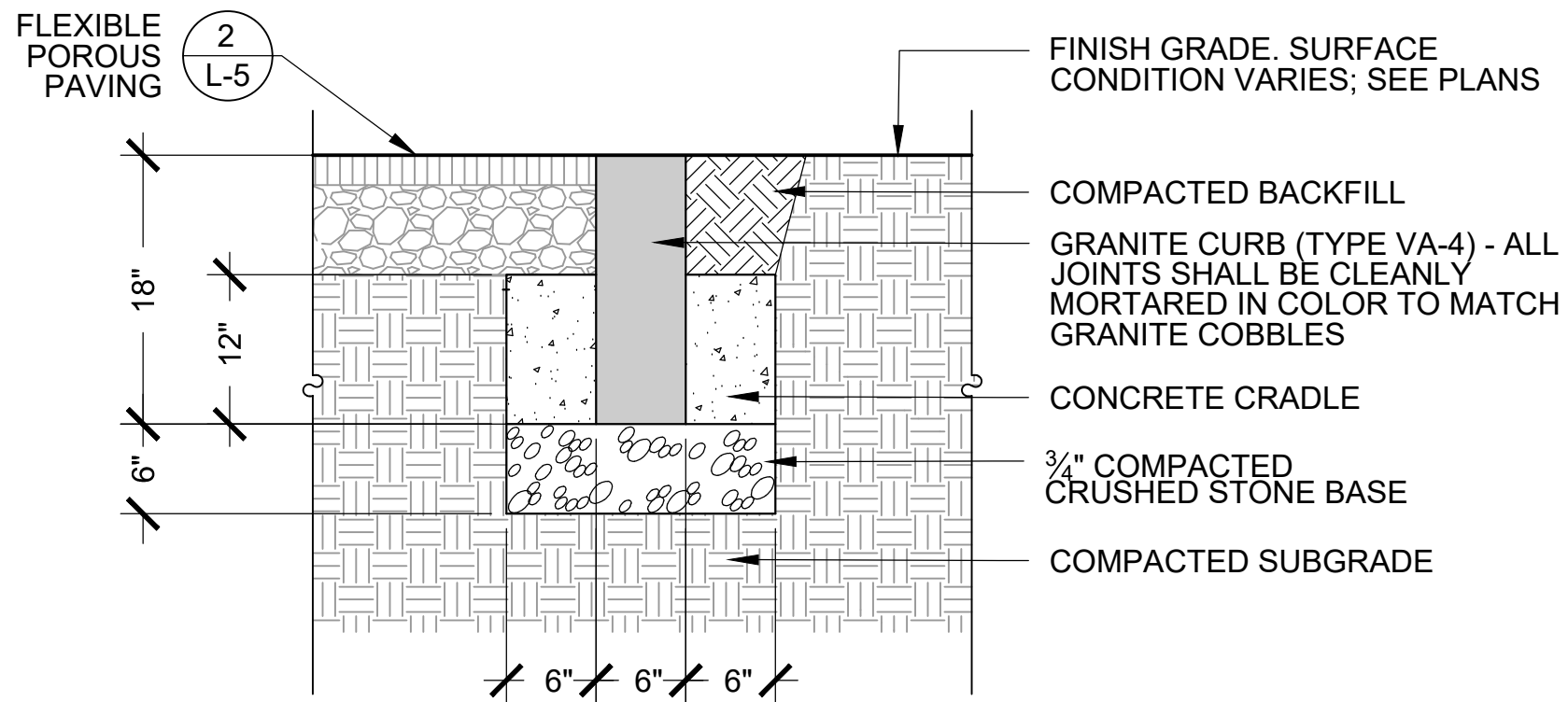
6 **INTERPRETIVE SIGN STRUCTURE**
SCALE: NTS



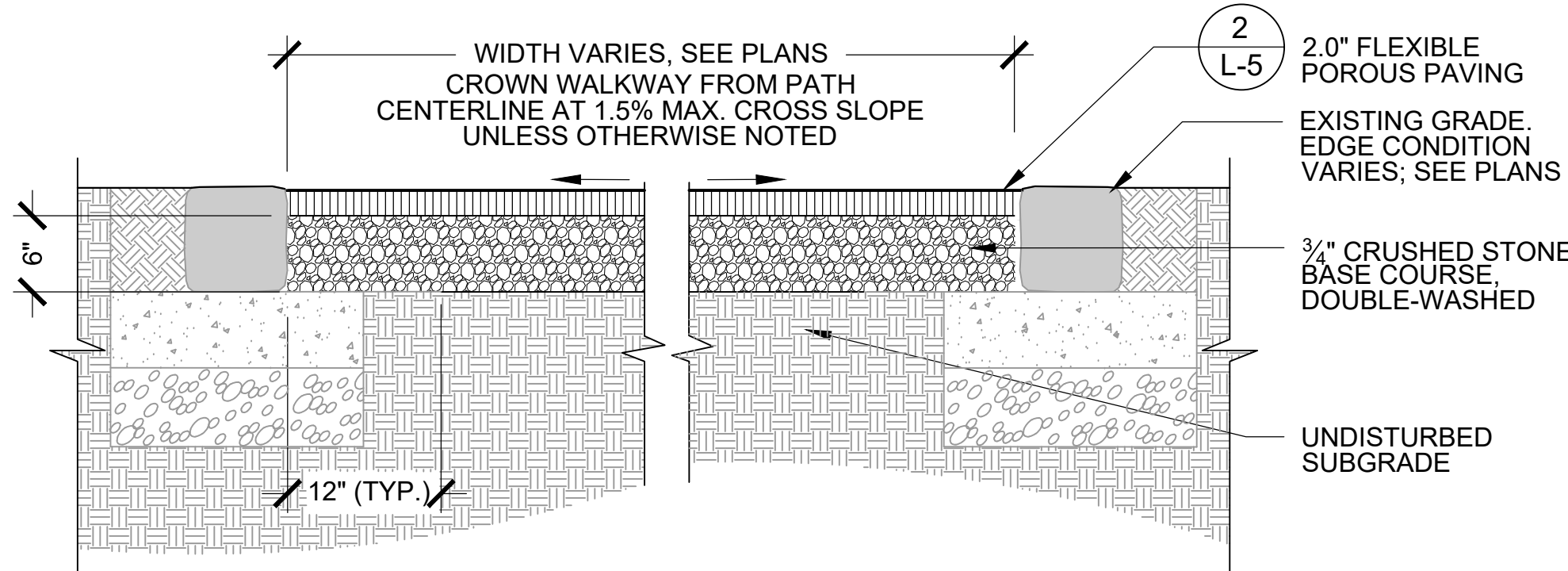
5 **TIMBER GUIDERAIL**
SCALE: NTS



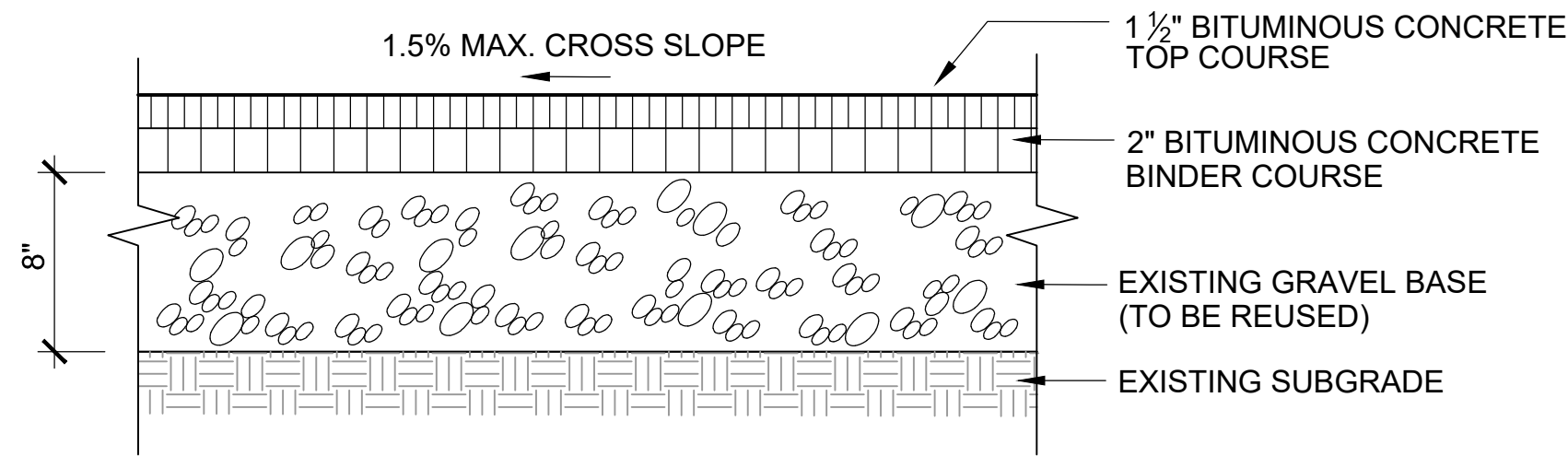
4 **RE-SET GRANITE COBBLES**
SCALE: NTS



3 **FLUSH GRANITE CURB**
SCALE: NTS



2 **FLEXIBLE POROUS PAVING**
SCALE: NTS



1 **BITUMINOUS CONCRETE PAVING**
SCALE: NTS

HATCH

27 Congress Street, Salem, MA 01970
tel. 978-740-0096 www.hatch.com

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SITE DETAILS

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L-5

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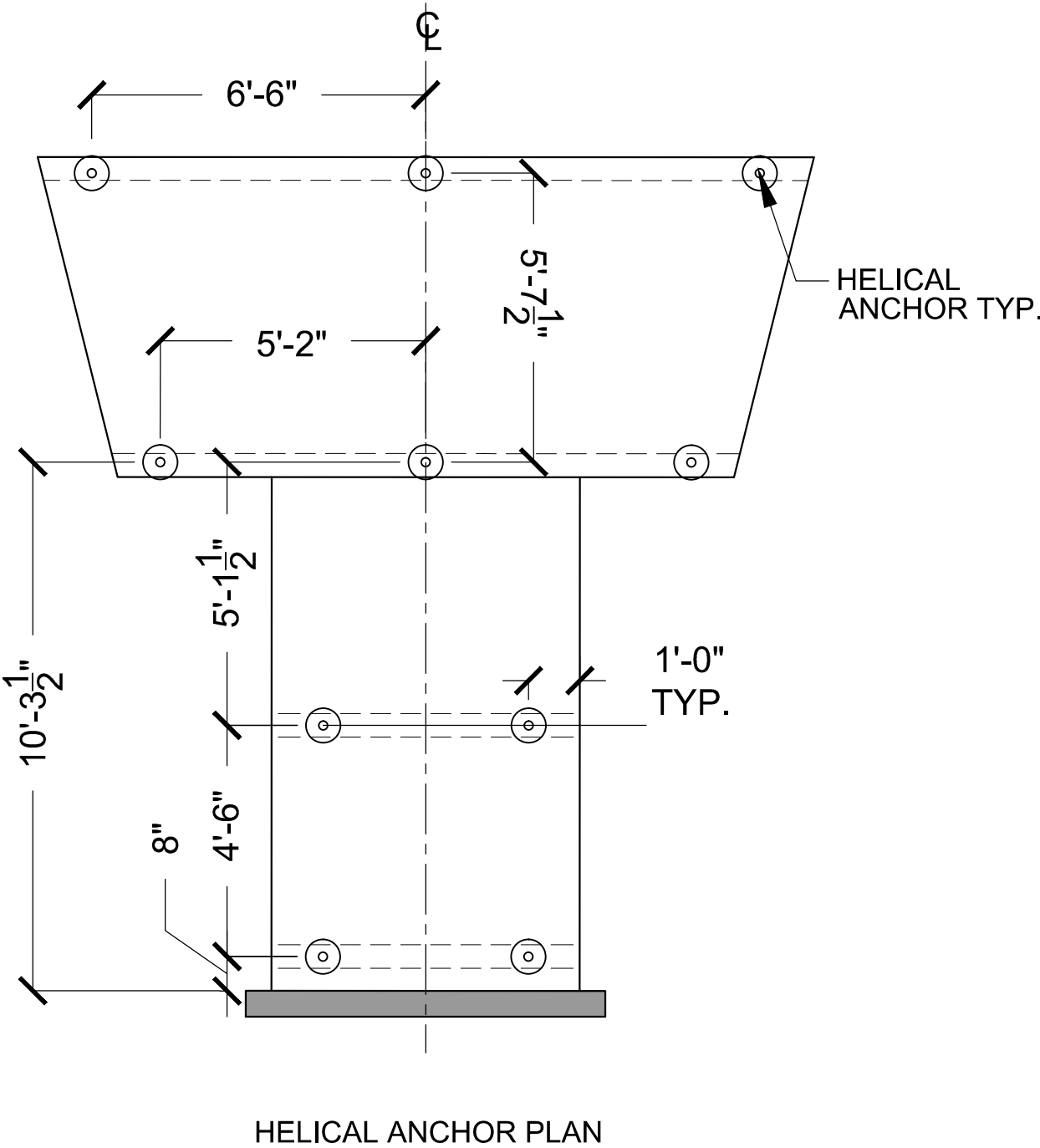
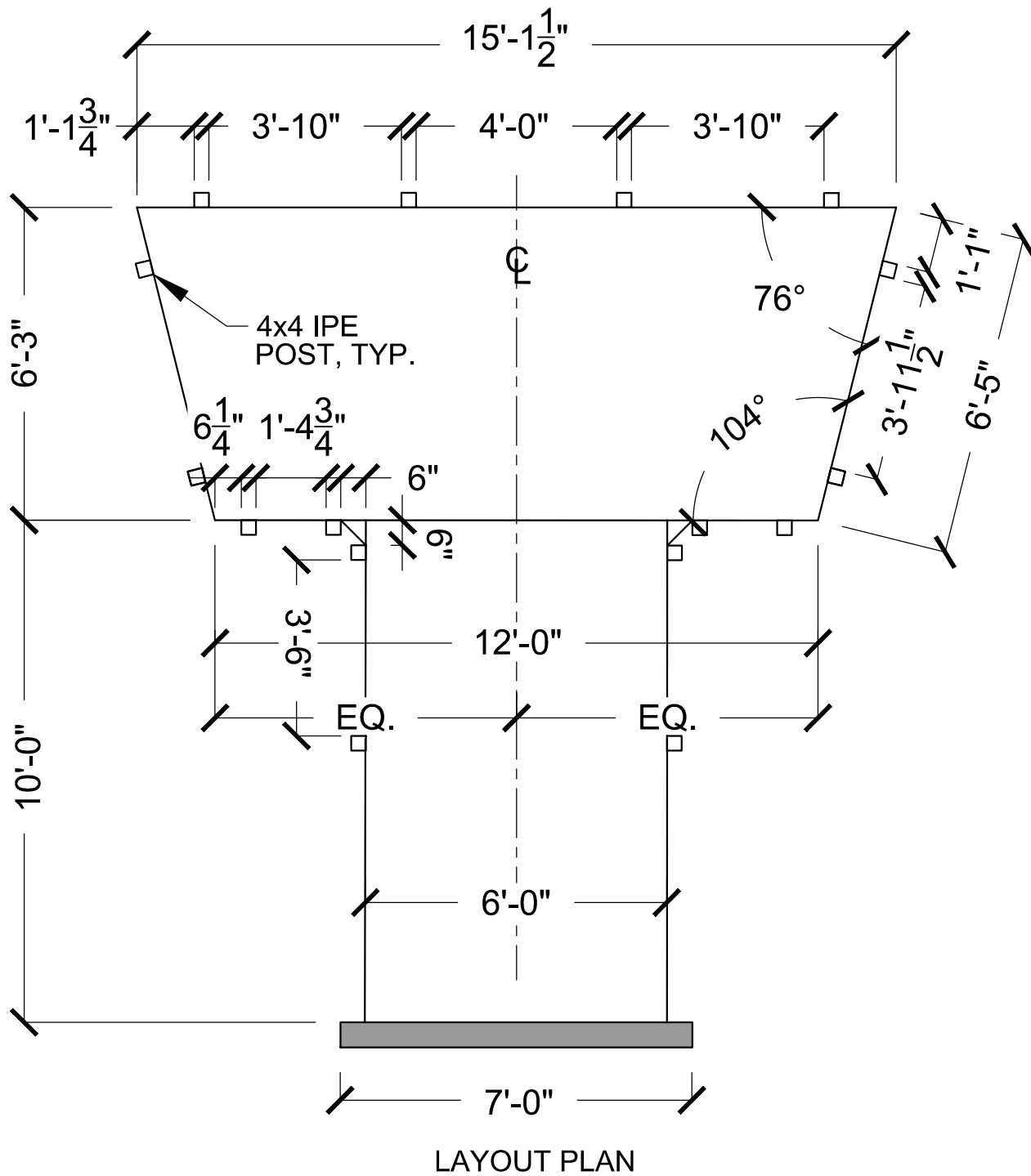
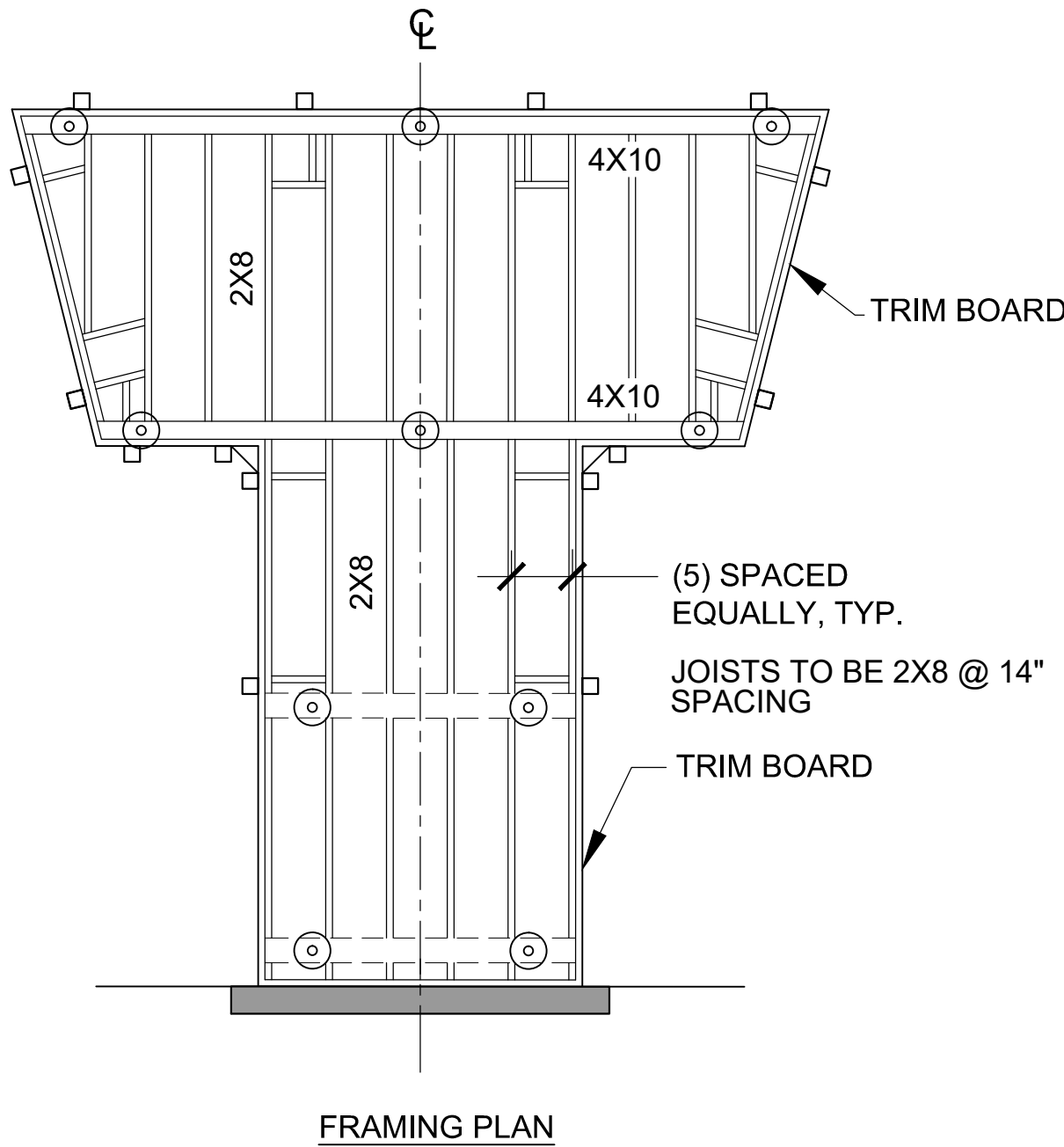
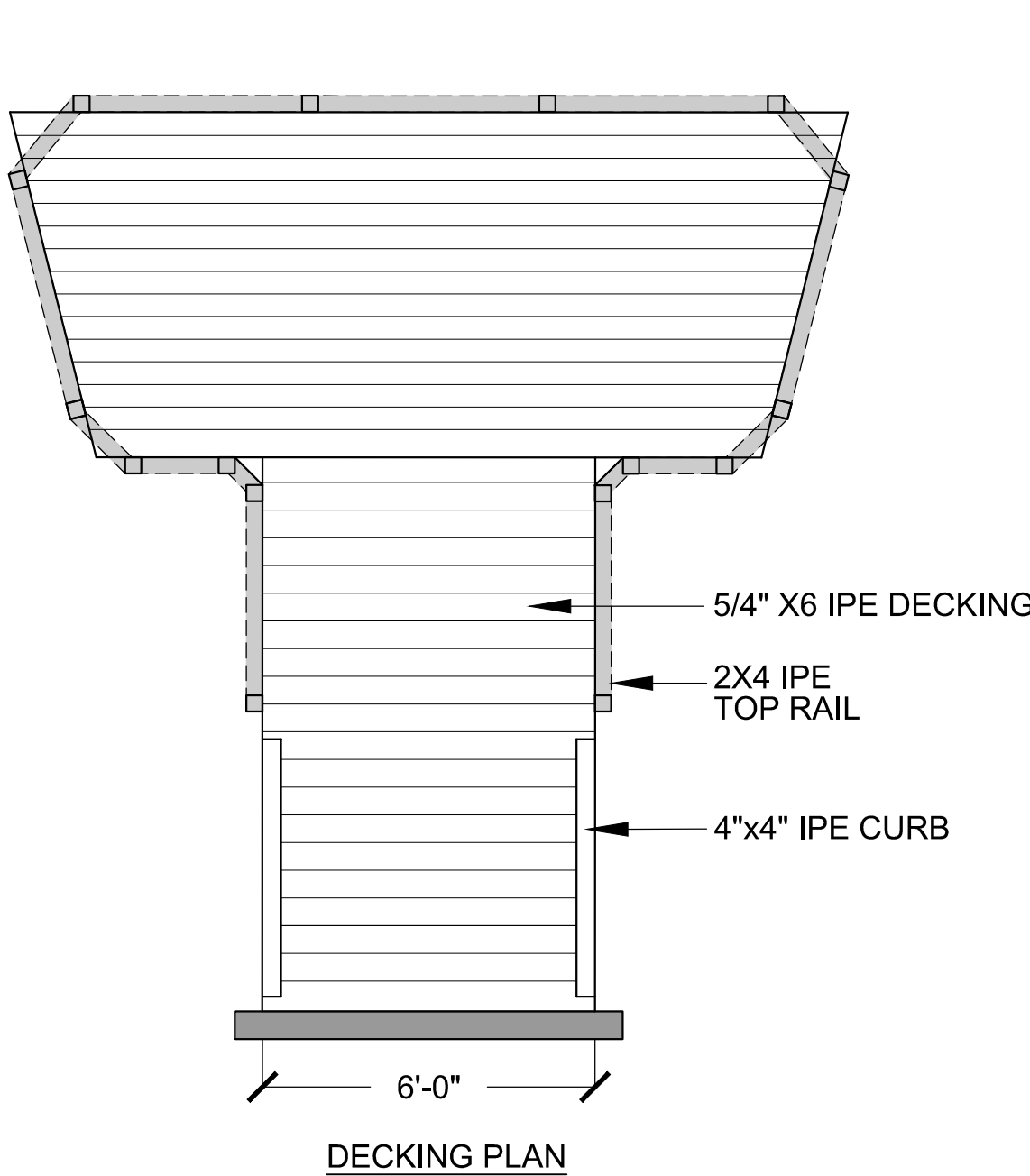
Number: Description: Date:

Sheet Title:

SITE DETAILS

Sheet No:

L-6



1

TIMBER OVERLOOK (NORTH)

SCALE: NTS

1. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE LATEST AMERICAN CONCRETE INSTITUTE (ACI) CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO, ACI 301, 315, AND 318. COLD WEATHER CONCRETING AS DEFINED BY ACI, SHALL BE IN ACCORDANCE WITH ACI 306R.
2. CONCRETE MIX SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT. PER ACI-318, AT A MINIMUM CONCRETE SHALL MEET THE FOLLOWING CRITERIA:
 - a. MAXIMUM WATER TO CEMENT RATIO: 0.45
 - b. MINIMUM COMPRESSIVE STRENGTH: 4,500 PSI
 - c. AIR CONTENT PERCENT*: 5.0 %

4"X4" IPE CURB BOLTED TO 2"X4"X6" IPE BLOCK AND DECKING WITH 3/8" SS LAG SCREW, TYP. COUNTERSINK, TYP.

3 1/2"

1 3/4"

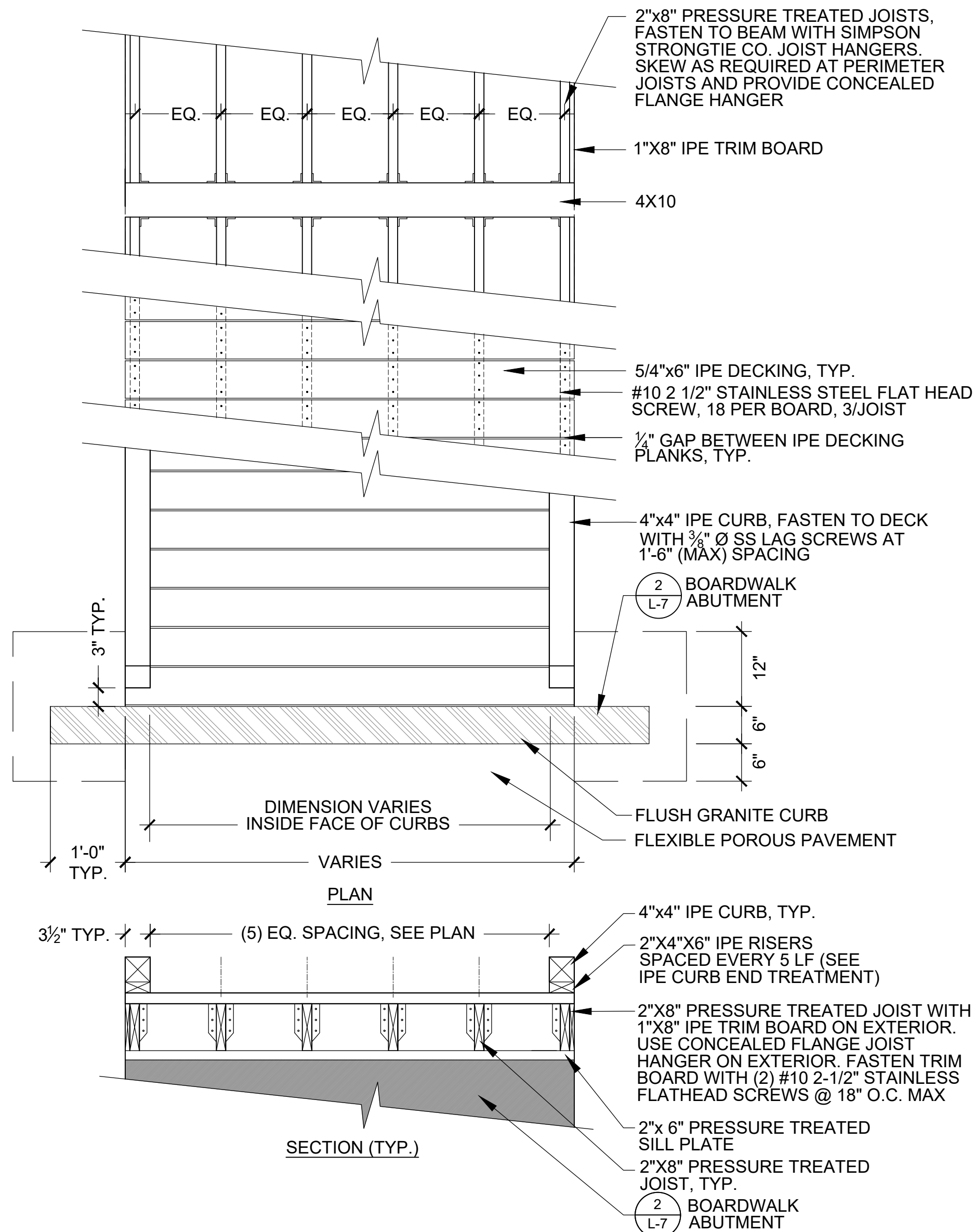
1 1/2"

Technical drawing of a cable railing system. The side view shows a railing with a height of 42" and a maximum span of 48" between posts. The end view shows a post with a diameter of 4"x4" IPE. The railing consists of 1"x3" IPE top rail blocking, a top rail (2"x4" IPE), and 3/16"Ø gauge stainless steel cable (3" O.C. MAX.). The cable is secured with quick connect lag or pivot tensioners as required. The post is secured with 1/2"Ø stainless steel bolt w/ washer and lock nut. The cable is 3" TYP. (typical) between posts.

NOTE:
CABLE TO PASS THROUGH POSTS ON LONGER SPANS

1"x3" IPE TOP RAIL BLOCKING
TOP RAIL (2"x4" IPE)
4"x4" IPE POST
3/16"Ø GAUGE STAINLESS STEEL CABLE (3" O.C. MAX.)
QUICK CONNECT THREADED ROD TURNBUCKLE AT END POSTS
QUICK CONNECT LAG OR PIVOT TENSIONER AS REQUIRED
POST SECURED WITH 1/2"Ø STAINLESS STEEL BOLT W/ WASHER AND LOCK NUT

48" MAX.
42"
3" TYP.

RAILING

2x8 END BOARD
2X6 DECKING PER PLAN
2X8 JOIST, SEE PLANS
1/2"Ø THREADED ROD @ 2'-0" O.C. W/NUIT & WASHER (9" MIN. EMBEDDED)
FLUSH
6"x18" GRANITE CURB SET FLUSH WITH PATHWAY FINISH GRADE
6"x6" CONCRETE CRADLE WITH (2) No. 4 BARS CONT.
No. 4 DOWELS @ 24" O.C. HOOKED OVER TOP BAR OF CRADLE
#4 @ 18" (MAX)
#4 (TOTAL 3)
2"x6" CONT. CONC. FTG. WITH (3) No. 4 BARS CONT. AND No. 4 TIES @ 48" O.C.
COMPACTED CRUSHED STONE
COMPACTED SUBGRADE

7. 4X4 RAILING POST LOCATION MAY BE ADJUSTED AS REQUIRED TO ALLOW FOR INSTALLATION OF BLOCKING AND CONNECTION. RAILING POST SPACING SHALL NOT EXCEED 5'-0" O.C.
8. DESIGN SERVICE AND STRENGTH LOADING IS PROVIDED IN TABLE 1 AND TABLE 2 OF DETAIL 1 ON THIS SHEET FOR THE DESIGN OF THE HELICAL ANCHORS.
9. AXIAL AND HORIZONTAL LOADING SHALL ACT CONCURRENTLY FOR EACH LOAD CASE WHERE APPLICABLE.
10. DECKING AND CURBS TO BE IPE AS SPECIFIED.
11. JOISTS AND BEAMS TO BE PRESSURE TREATED.
12. ALL WOOD DIMENSIONS ARE NOMINAL.
13. CONNECTORS TO BE GALVANIZED SIMPSON-TIE OR APPROVED EQUIVALENT.

| DESIGN LOADS PER HELICAL ANCHOR | | | |
|---------------------------------|-------------|----------------------------------|--|
| SOUTH OVERLOOK STRUCTURE | | | |
| LOAD CASE | LIMIT STATE | MAXIMUM AXIAL LOAD* (KIPS) | MAXIMUM SHEAR AT ANCHOR HEAD HEAD (KIPS) |
| 1 | SERVICE | -5.5 | - |
| 2 | SERVICE | 6.3 | 1.20 |
| 3 | STRENGTH | -7.7 | - |
| 4 | STRENGTH | 10.5 | 2.00 |

| DESIGN LOADS PER HELICAL ANCHOR | | | |
|---------------------------------|-------------|-------------------------------|---|
| NORTH OVERLOOK STRUCTURE | | | |
| LOAD CASE | LIMIT STATE | MAXIMUM AXIAL LOAD* (KIPS) | MAXIMUM SHEAR AT ANCHOR HEAD HEAD (KIPS) |
| 1 | SERVICE | -3.7 | - |
| 2 | SERVICE | 3.9 | 0.75 |
| 3 | STRENGTH | -4.8 | - |
| 4 | STRENGTH | 6.5 | 1.20 |

4"x4" IPE CURB

2"x4"x6" IPE BLOCK

TRIM BOARD

4"x10" (TYP)

(2) 3/8" Ø GALVANIZED THROUGH BOLTS

GALVANIZED STEEL SUPPORT BRACKETS

EXISTING GRADE

HELICAL ANCHOR

SUPPORTING PLATE
STANDARD: CSA G40.21
STEEL

STEEL SHAFT
TECHNO METAL POST™
MODEL P3: 3½" X 0.216"
STANDARD: ASTM A500
GRADE C

INSTALLED TO DEPTHS
RANGING FROM
APPROXIMATELY 20 TO 22.6
FEET BELOW SOIL SURFACE

½" THICK FACTORY WELDED
SINGLE 10° Ø HELIX

NOTE: HELICAL PILE AND
SUPPORTING PLATE ARE
GALVANIZED IN COMPLIANCE WITH
STANDARD ASTM A123/A123M-13

1 HELICAL ANCHOR

SCALE: NTS

Sheet No:

L-7

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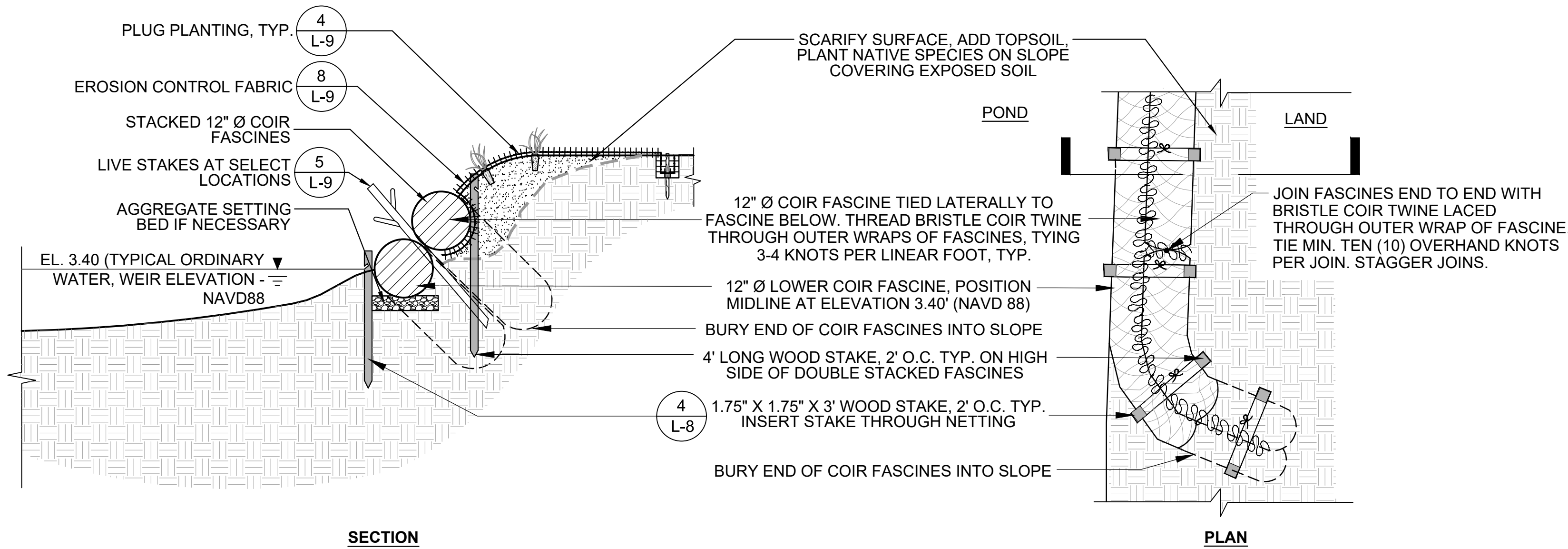
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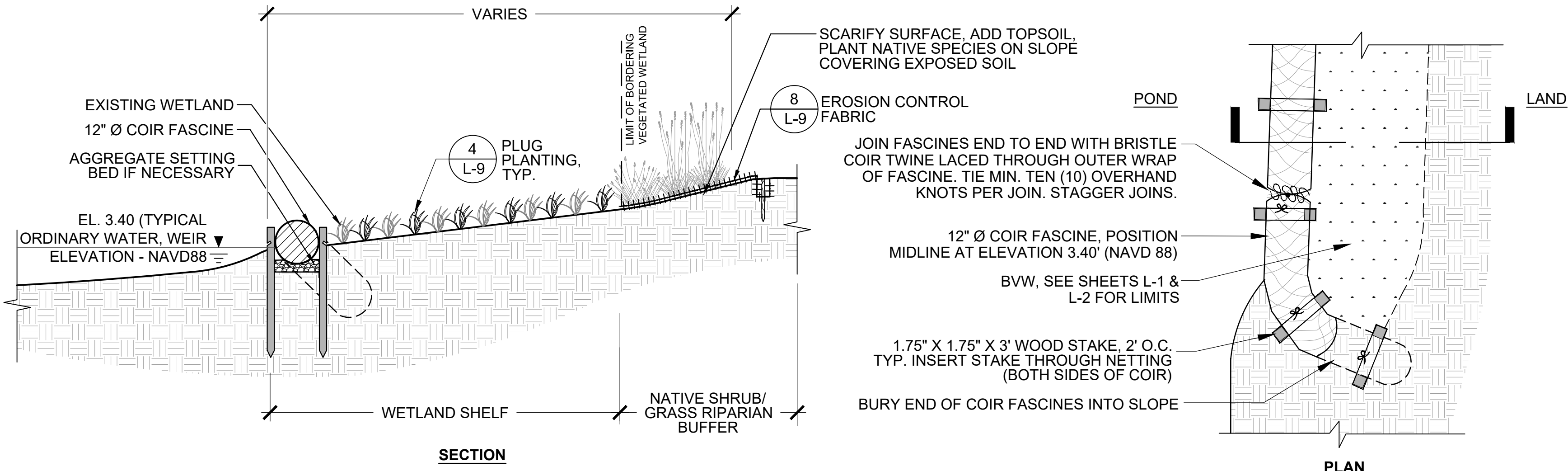
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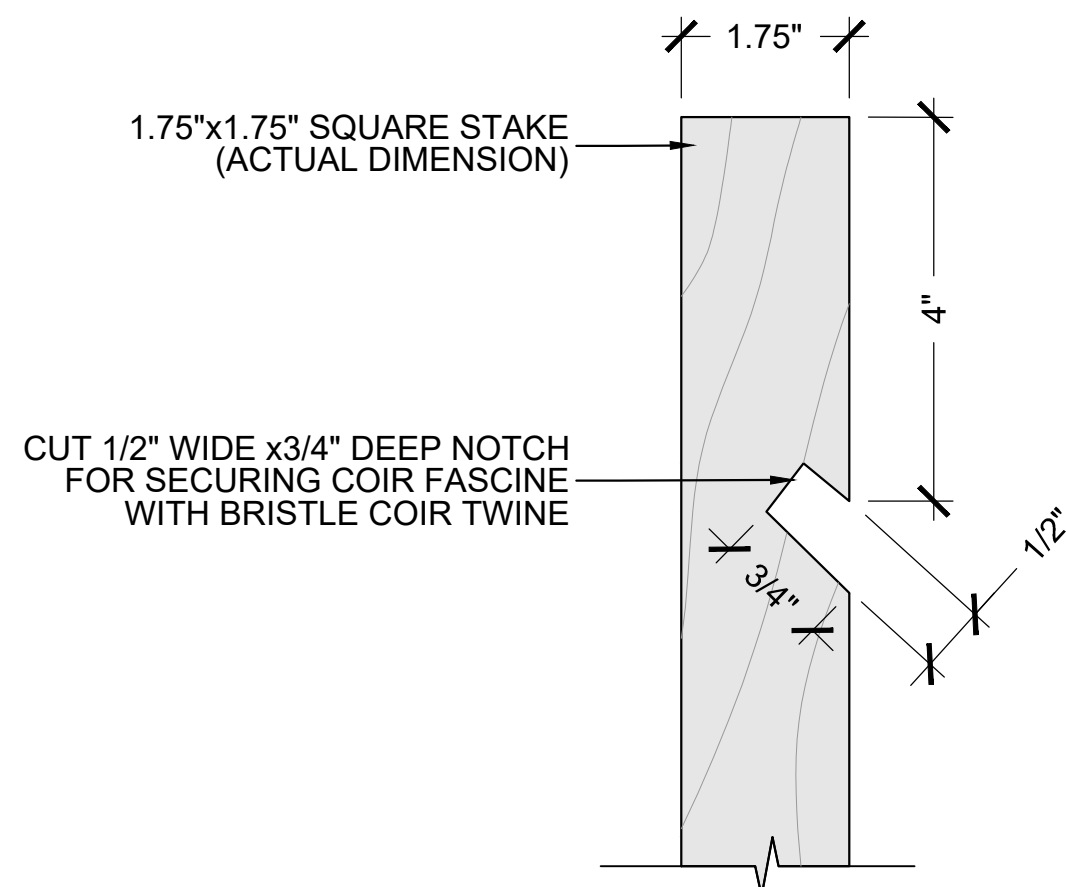
L-8



3 TREATMENT C: STACKED COIR FASCINE
SCALE: NTS



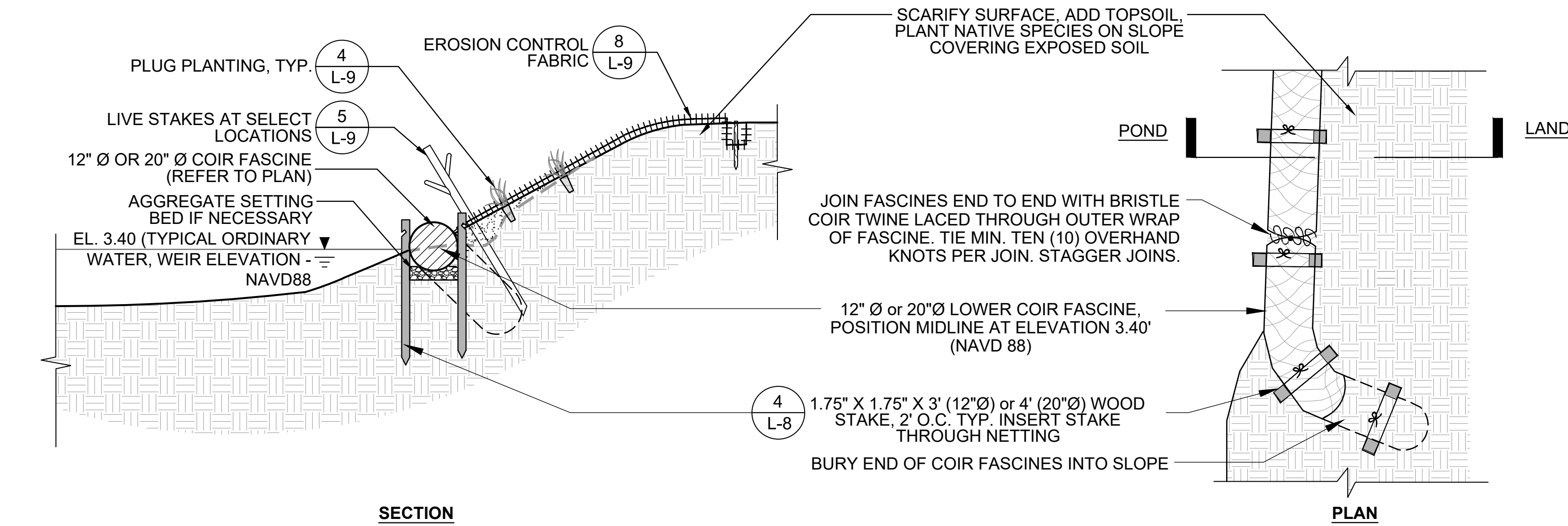
2 TREATMENT B: SINGLE COIR FASCINE AT WETLAND
SCALE: NTS



NOTE:

STAKES SHALL BE 3'-0" LENGTH ON BOTH SIDES OF SINGLE COIR FASCINE AND LOWER SIDE OF STACKED FASCINE. 4'-0" LENGTH STAKES SHALL BE USED ON THE HIGH SIDE (LAND SIDE) OF THE UPPER STACKED FASCINE.

4 NOTCHED WOODEN STAKE (AT COIR FASCINES)
SCALE: NTS



1 TREATMENT A: SINGLE COIR FASCINE
SCALE: NTS

PLANTING NOTES:

- SUBSTITUTIONS OF PLANT SPECIES SHALL NOT BE PERMITTED. IN CASES WHERE INDIVIDUAL SPECIES ARE NOT COMMERCIALY AVAILABLE, QUANTITIES WILL BE MADE UP WITH ANOTHER SPECIES IN THE PLANT SCHEDULE AFTER WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE.
- ALL SPECIES SHALL BE STRAIGHT SPECIES; NO CULTIVARS SHALL BE USED, UNLESS OTHERWISE NOTED AND APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE.
- SPRING VALLEY PLANTINGS (AREA 4) ASSOCIATED WITH ADD ALTERNATE #3.
- ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN HORTICULTURE INDUSTRY ASSOCIATION. IN ADDITION, ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
- TO ENSURE AVAILABILITY AND SECURE QUANTITIES OF SPECIFIED PLANT MATERIALS, CONTRACTOR SHALL MAKE ARRANGEMENTS WITH NURSERY(IES) AND OWNER WITHIN THIRTY (30) DAYS OF AWARD OF CONTRACT (SEE SPECIFICATION SECTION 02900 - PLANTING).
- CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING PLAN AS SHOWN ON DRAWINGS.
- NO PLANT MATERIAL SHALL BE PLANTED BEFORE ACCEPTANCE OF FINAL GRADING AND SLOPE TREATMENTS BY THE OWNER'S REPRESENTATIVE.

| TOTAL QTY | Area 1 Spy Pond | Area 2 Scannell Field | Area 3 Boys & Girls | SIZE | DETAIL # (SHT L-9) | ID | Species (synonym) | Common Name |
|--------------------------------------|--------------------|--------------------------|------------------------|-----------|-----------------------|----|-------------------------------------|---------------------|
| TREES/ TUBELINGS & 2' HT. CONTAINERS | | | | | | | | |
| 5 | | 2 | 3 | #2, 4' ht | I | AR | <i>Acer rubrum</i> | red maple |
| 3 | | 3 | | #2, 4' ht | I | BF | <i>Benthamidia (Cornus) florida</i> | flowering dogwood |
| 2 | | 2 | | #2, 4' ht | I | BA | <i>Betula alleghaniensis</i> | yellow birch |
| 5 | | 2 | 3 | #2, 4' ht | I | BL | <i>Betula lenta</i> | black (sweet) birch |
| 2 | | 2 | | #2, 4' ht | I | CC | <i>Carpinus caroliniana</i> | American hornbeam |
| 2 | | 2 | | #2, 4' ht | I | JV | <i>Juniperus virginiana</i> | red cedar |
| 6 | | 3 | 3 | #2, 4' ht | I | NS | <i>Nyssa sylvatica</i> | black gum |
| 5 | | 2 | 3 | #2, 4' ht | I | OV | <i>Ostrya virginiana</i> | hop-hornbeam |
| 1 | | 1 | | #2, 4' ht | I | QA | <i>Quercus alba</i> | white oak |
| 4 | | 1 | 3 | #2, 4' ht | I | QR | <i>Quercus rubra</i> | red oak |
| 2 | | 2 | | #2, 4' ht | I | SA | <i>Sassafras albidum</i> | sassafras |
| 37 | 0 | 22 | 15 | | | | | |

| | | | | | | | | |
|--|-----|-----|-----|------------|---|-----|---|------------------|
| SHRUBS/ LIVE STAKES, TUBELINGS & #1 CONTAINERS | | | | | | | | |
| 36 | 36 | | | #1 | 3 | CA | <i>Clethra alnifolia</i> | sweet pepperbush |
| 5 | 5 | | | #1 | 3 | CEA | <i>Ceanothus americanus</i> | New Jersey tea |
| 0 | | | | #1 | 3 | CO | <i>Cephalanthus occidentalis</i> | buttonbush |
| 100 | | | 100 | #1 | 3 | CAM | <i>Corylus americana</i> | American filbert |
| 7 | 7 | | | #1 | 3 | IV | <i>Ilex verticillata</i> | winterberry |
| 110 | 10 | | 100 | #1 | 3 | LB | <i>Lindera benzoin</i> | spicebush |
| 30 | 30 | | | tubeling | 2 | SD | <i>Salix discolor</i> | pussy willow |
| 10 | 10 | | | #1 | 3 | SLB | <i>Spiraea alba</i> var. <i>latifolia</i> | meadowsweet |
| 70 | 70 | | | #1 | 3 | ST | <i>Spiraea tomentosa</i> | steeplesbush |
| 404 | 64 | 100 | 240 | live stake | 5 | COA | <i>Swida (Cornus) amomum</i> | silky dogwood |
| 500 | 0 | 500 | | live stake | 5 | SRA | <i>Swida ragemosa</i> | gray dogwood |
| 0 | | | | #1 | 3 | VL | <i>Viburnum lentago</i> | nannyberry |
| 1272 | 232 | 600 | 440 | | | | | |

| | | | | | | | | |
|--|------|-----|-----|---------|---|-----|-----------------------------------|------------------------|
| HERBACEOUS/ PLUGS & #1 CONTAINERS (FOOTPATH RESTORATION) | | | | | | | | |
| 75 | | 25 | 50 | 2" plug | 4 | aca | <i>Achillea canadensis</i> | Canada anemone |
| 50 | 50 | | | 2" plug | 4 | aq | <i>Aquilegia canadensis</i> | columbine |
| 25 | 25 | | | 2" plug | 4 | bt | <i>Baptisia tinctoria</i> | yellow wild indigo |
| 600 | | 400 | 200 | 2" plug | 4 | cpe | <i>Carex pensylvanica</i> | Pennsylvania sedge |
| 0 | | | | #1 | 3 | dp | <i>Dennstaedtia punctilobula</i> | hay-scented fern |
| 150 | 50 | 100 | | 2" plug | 4 | dc | <i>Desmodium canadense</i> | Canadian tick trefoil |
| 250 | | 200 | 50 | #1 | 3 | dm | <i>Dryopteris marginalis</i> | marginal woodfern |
| 100 | 100 | | | 2" plug | 4 | epe | <i>Eupatorium perfoliatum</i> | boneset |
| 150 | 150 | | | 2" plug | 4 | ed | <i>Eurybia (Aster) divaricata</i> | white wood aster |
| 300 | 300 | | | 2" plug | 4 | jc | <i>Juncus canadensis</i> | Canada rush |
| 100 | 100 | | | 2" plug | 4 | jt | <i>Juncus tenuis</i> | Slender rush |
| 100 | 100 | | | 2" plug | 4 | lc | <i>Labelia cardinalis</i> | cardinal flower |
| 125 | 125 | | | #1 | 3 | os | <i>Onoclea sensibilis</i> | sensitive fern |
| 20 | 20 | | | #1 | 3 | oc | <i>Osmunda cinnamomea</i> | cinnamon fern |
| 25 | 25 | | | 2" plug | 4 | pm | <i>Pycnanthemum muticum</i> | short-toothed mtn-mint |
| 0 | | | | 2" plug | 4 | ss | <i>Schizachyrium scoparium</i> | little bluestem |
| 0 | | | | 2" plug | 4 | sba | <i>Symphotrichum laeve</i> | smooth aster |
| 100 | 100 | | | 2" plug | 4 | sna | <i>Symphotrichum nova-angliae</i> | New England aster |
| 0 | | | | 2" plug | 4 | to | <i>Tradescantia ohnensis</i> | smooth spiderwort |
| 200 | 200 | | | 2" plug | 4 | vh | <i>Verbena hastata</i> | blue vervain |
| 75 | 75 | | | 2" plug | 4 | za | <i>Zizia aurea</i> | golden alexanders |
| 2445 | 1420 | 725 | 300 | | | | | |

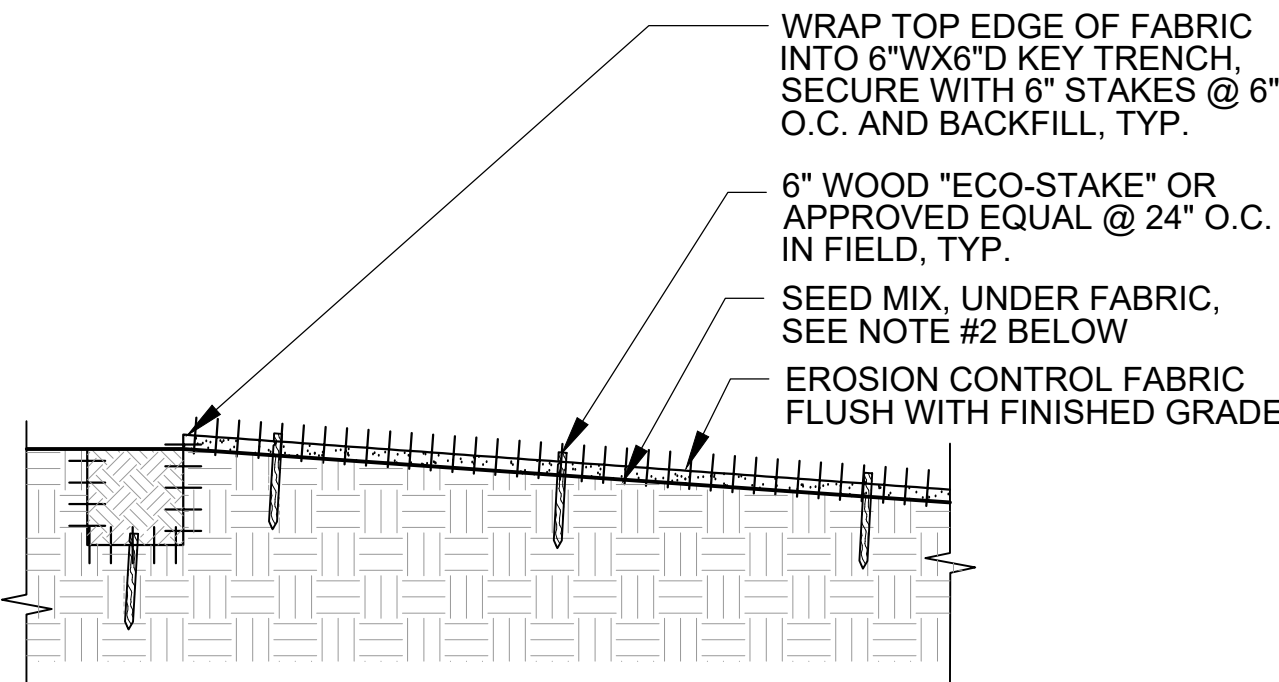
| | | | | | | | | |
|--|-----|------|-----|---------|---|-----|-----------------------------------|--------------------|
| HERBACEOUS/ PLUGS & #1 CONTAINERS (BYW, FASCINES, BIOBASINS) | | | | | | | | |
| 50 | 50 | | | 2" plug | 4 | aca | <i>Anemone canadensis</i> | Canada anemone |
| 100 | | 100 | | 2" plug | 4 | at | <i>Asclepias tuberosa</i> | butterfly weed |
| 100 | | 100 | | 2" plug | 4 | ep | <i>Echinacea purpurea</i> | purple cone flower |
| 625 | 150 | 475 | | 2" plug | 4 | jc | <i>Juncus canadensis</i> | Canada rush |
| 600 | 100 | 300 | 200 | 2" plug | 4 | jt | <i>Juncus tenuis</i> | Slender rush |
| 250 | 100 | 100 | 50 | 2" plug | 4 | lc | <i>Labelia cardinalis</i> | cardinal flower |
| 10 | 10 | | | 2" plug | 4 | lp | <i>Ludwigia palustris</i> | water primrose |
| 320 | 100 | 120 | 100 | #1 | 3 | os | <i>Onoclea sensibilis</i> | sensitive fern |
| 100 | | 100 | | 2" plug | 4 | pv | <i>Panicum virgatum</i> | switchgrass |
| 100 | | 100 | | 2" plug | 4 | rf | <i>Rudbeckia fulgida</i> | black-eyed Susan |
| 100 | | 100 | | 2" plug | 4 | ss | <i>Schizachyrium scoparium</i> | little bluestem |
| 350 | 100 | 200 | 50 | 2" plug | 4 | sna | <i>Symphotrichum nova-angliae</i> | New England aster |
| 100 | | 50 | 50 | 2" plug | 4 | vh | <i>Verbena hastata</i> | blue vervain |
| 2805 | 610 | 1745 | 450 | | | | | |

| | | | | | | | | |
|-------------|--------------------|--------------------------|------------------------|--|--|--|--|--|
| AREA TOTALS | | | | | | | | |
| 6559 | 2262 | 3092 | 1205 | | | | | |
| TOTAL QTY | Area 1 Spy Pond | Area 2 Scannell Field | Area 3 Boys & Girls | | | | | |

9 PLANT SCHEDULE
SCALE: NTS

- WATERING OF INSTALLED PLANTS AND SEEDING AREAS, EITHER THROUGH THE TEMPORARY IRRIGATION SYSTEM OR BY HAND, SHALL OCCUR WITHIN 24 HOURS OF THE FIRST DAY OF PLANTING OR SEEDING AND CONTINUE AS OUTLINED IN THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED, STOLEN, DEAD, DECLINING OR LOST MATERIAL UNTIL THE COMPLETION OF THE MAINTENANCE AND GUARANTEE PERIODS AS OUTLINED IN THE CONTRACT DOCUMENTS.
- ALL PLANT MATERIAL SHALL BE NURSERY GROWN. NO FIELD-COLLECTED SPECIMENS WILL BE ALLOWED.
- ALL NEW PLANTS SHALL BE CONTAINERIZED SHRUBS OR HERBACEOUS PLUGS, UNLESS OTHERWISE NOTED ON THE PLANT SCHEDULE.
- ALL NEW PLANTS SHALL BE TAGGED AND APPROVED BY THE OWNER'S REPRESENTATIVE AT THE NURSERY PRIOR TO DELIVERY TO THE SITE. TAGGING OF REPRESENTATIVE SAMPLES OF SHRUBS AND HERBACEOUS MATERIAL MAY BE ACCEPTABLE WITH PRIOR APPROVAL BY OWNER'S REPRESENTATIVE.
- ALL AREAS TO BE SEEDDED SHALL RECEIVE SOIL PREPARATION AS SPECIFIED PRIOR TO SEEDING, UNLESS OTHERWISE NOTED ON PLAN.

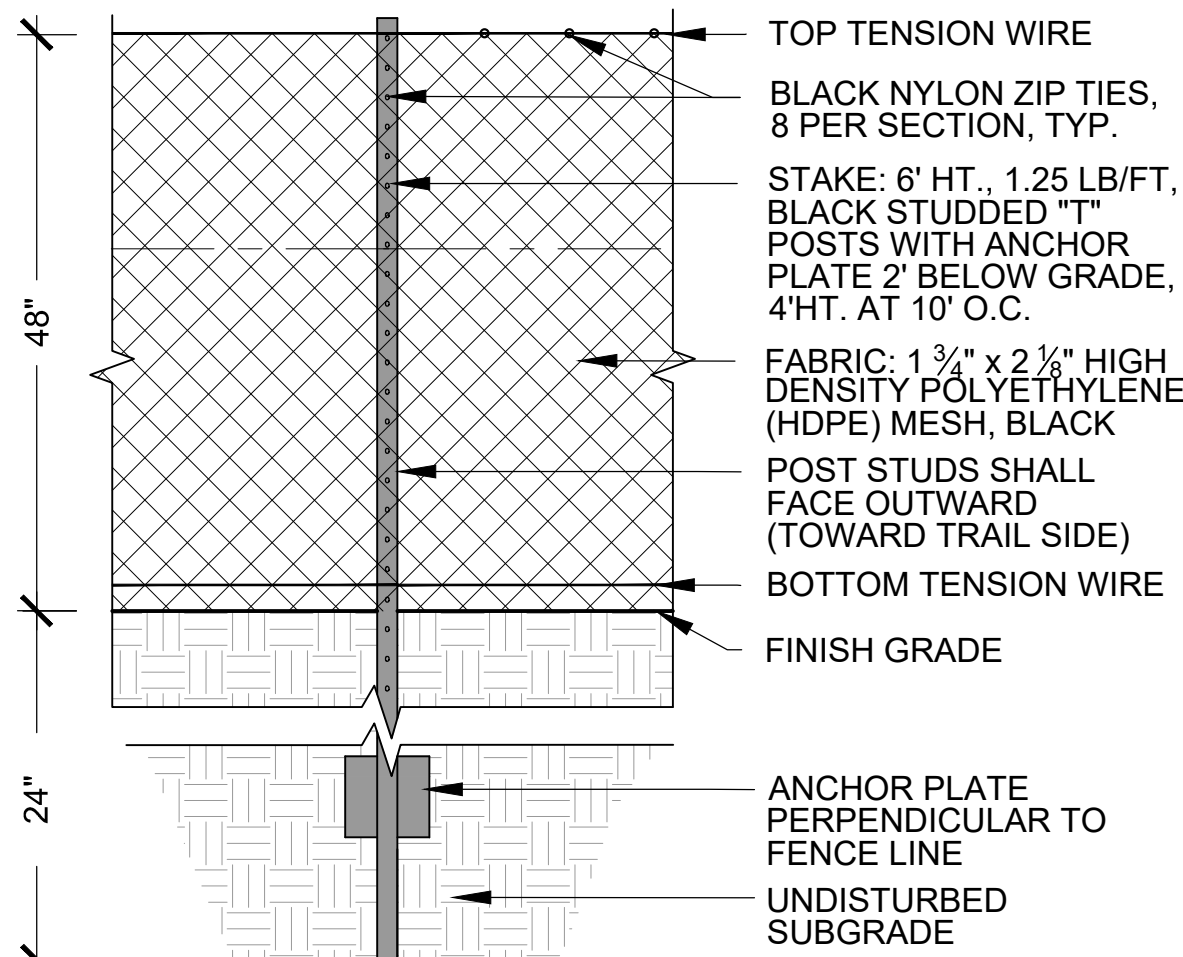
REFER TO PLANTING CONTRACTOR (PARTERRE ECOLOGICAL) AS-BUILT PLANTING PLANS



NOTES:

- SEE SHEETS L-1 & L-2 FOR AREAS TO RECEIVE EROSION CONTROL FABRIC
- REFER TO SPEC SECTION 02952, RESTORATION SEEDING, FOR SPECIES COMPOSITION OF SEED MIX.

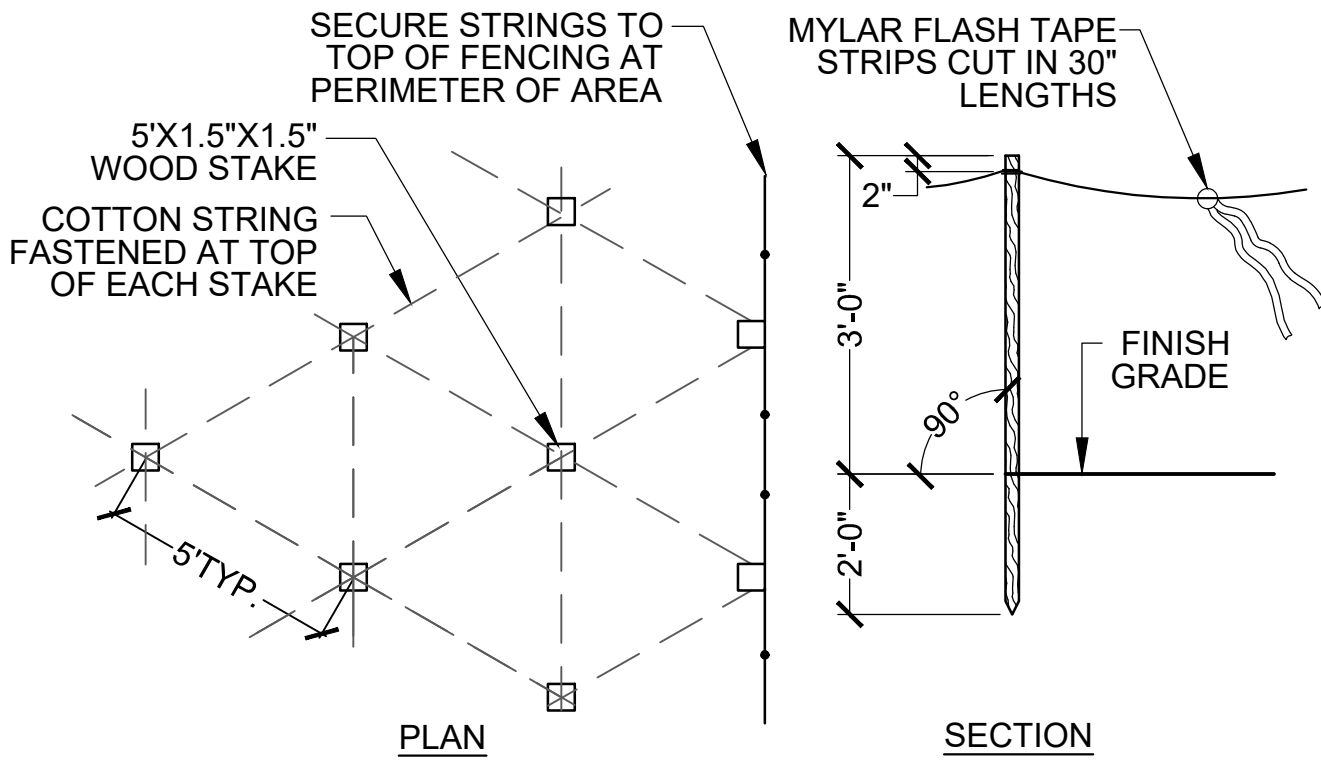
8 EROSION CONTROL FABRIC
SCALE: NTS



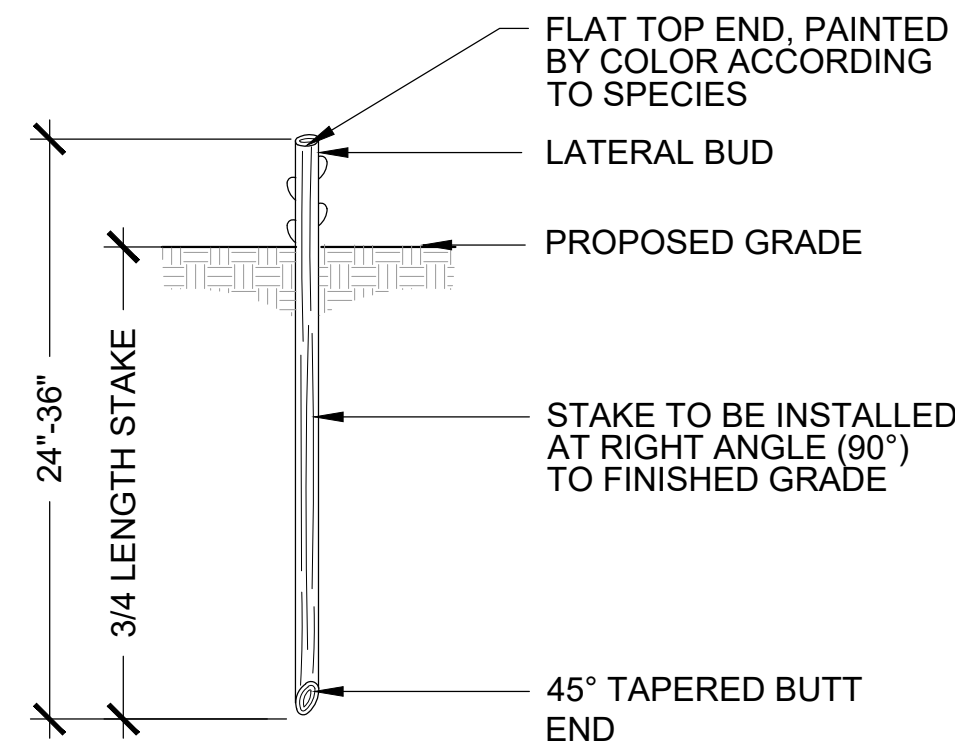
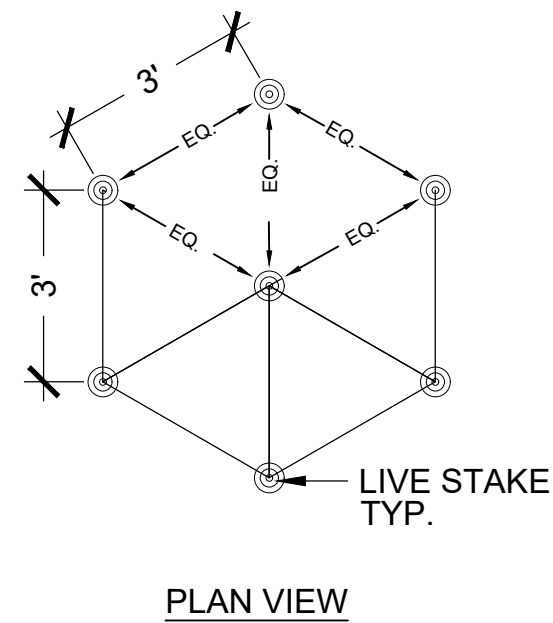
NOTE:

- AT CHANGES IN DIRECTION, FENCE SHALL BE GENTLE CURVE, NOT EXCEEDING A RADIUS OF 170.

7 PLANT ESTABLISHMENT FENCE
SCALE: NTS

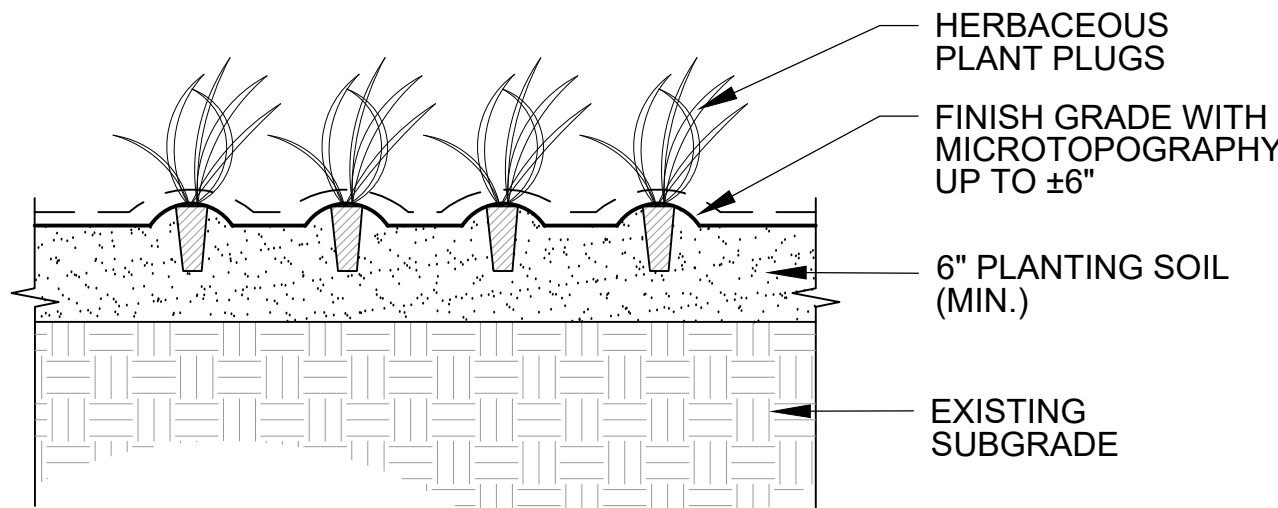


6 GOOSE DETERRENT FENCE
SCALE: NTS



SECTION

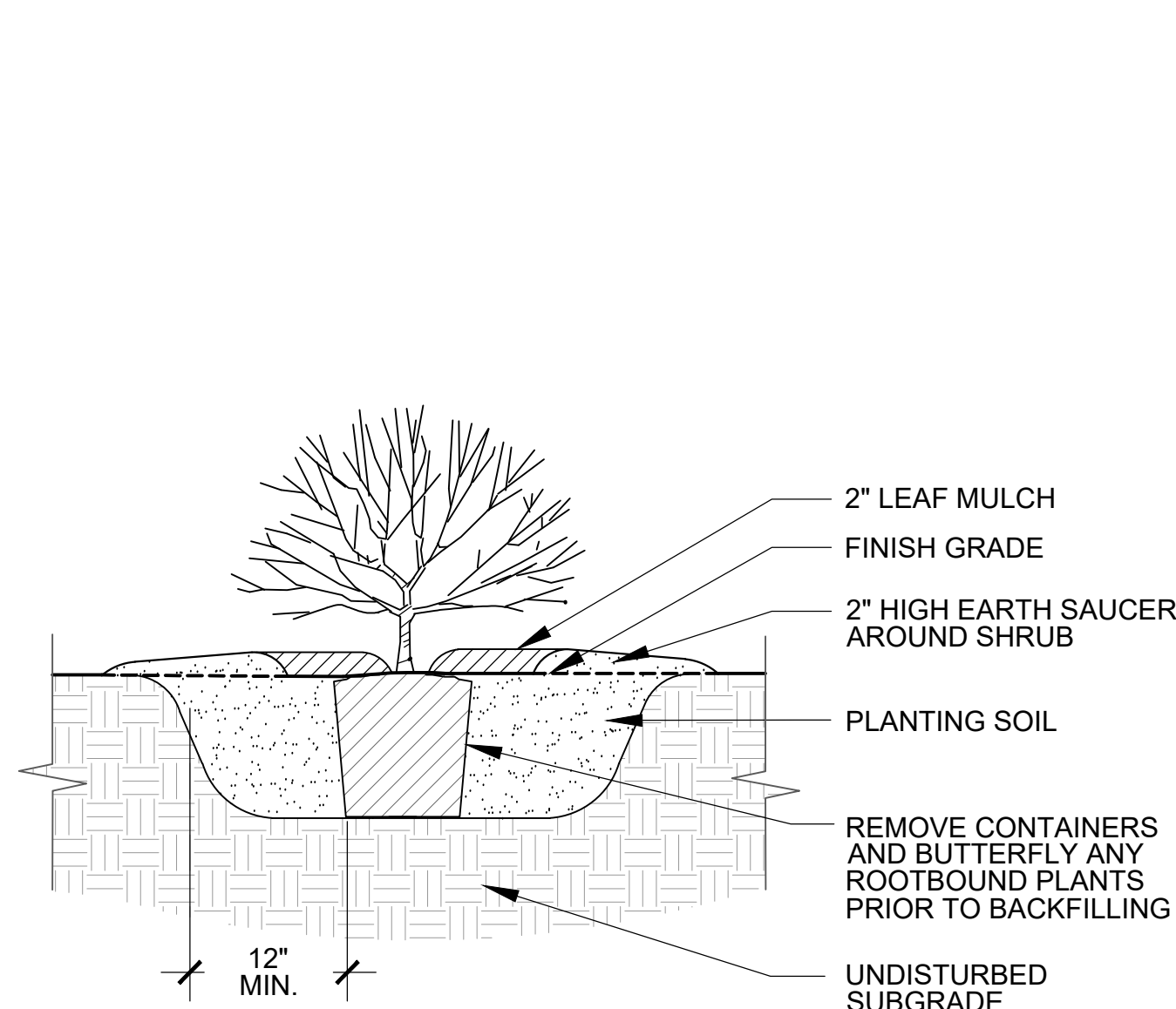
5 LIVE STAKE PLANTING
SCALE: NTS



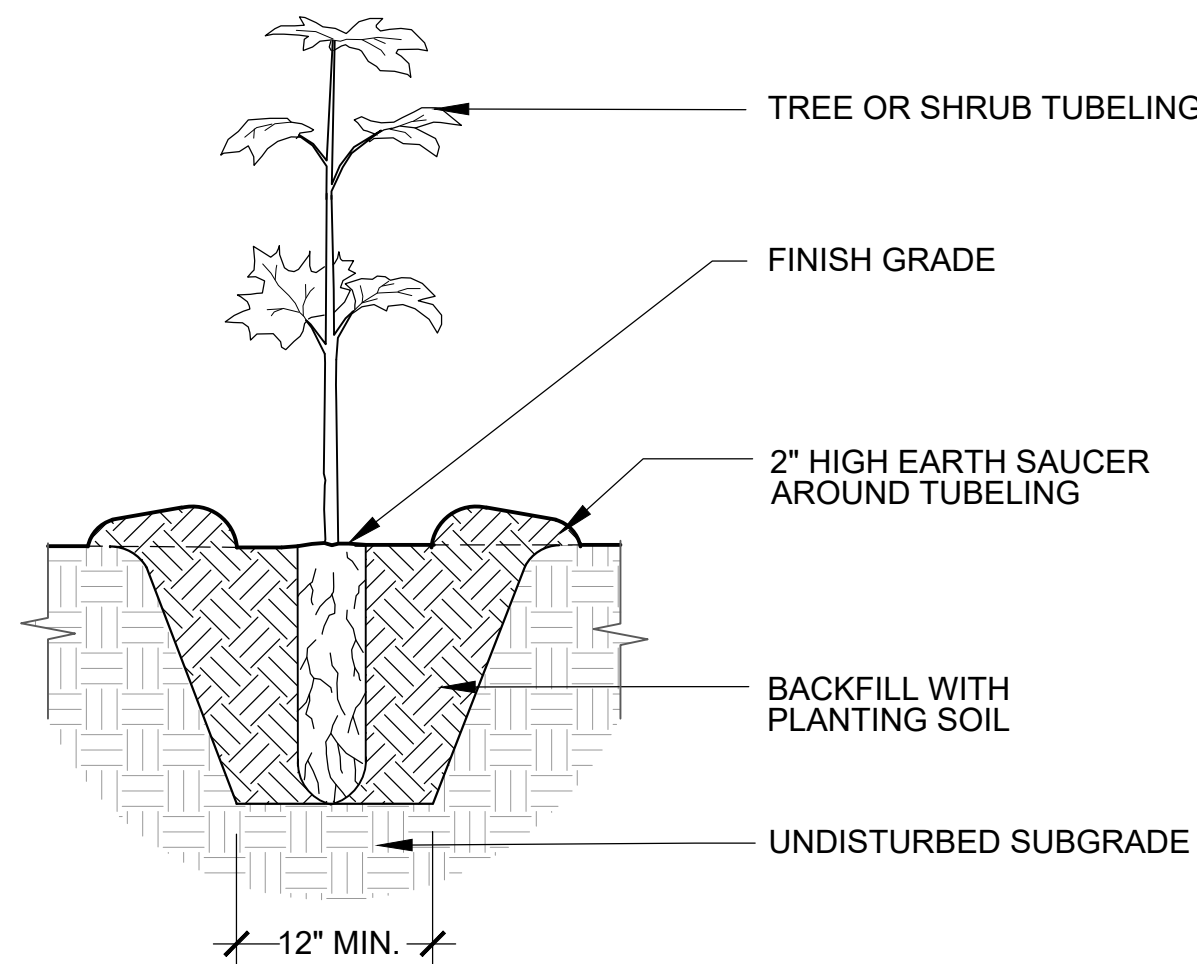
NOTES:

- EROSION CONTROL FABRIC TO BE INSTALLED PRIOR TO PLANTING.
- CUT "X" PATTERN IN EROSION CONTROL FABRIC 4"x4" TO ALLOW FOR PLUG PLANTING.
- SEE PLANT SCHEDULE FOR PLUG SPACING.

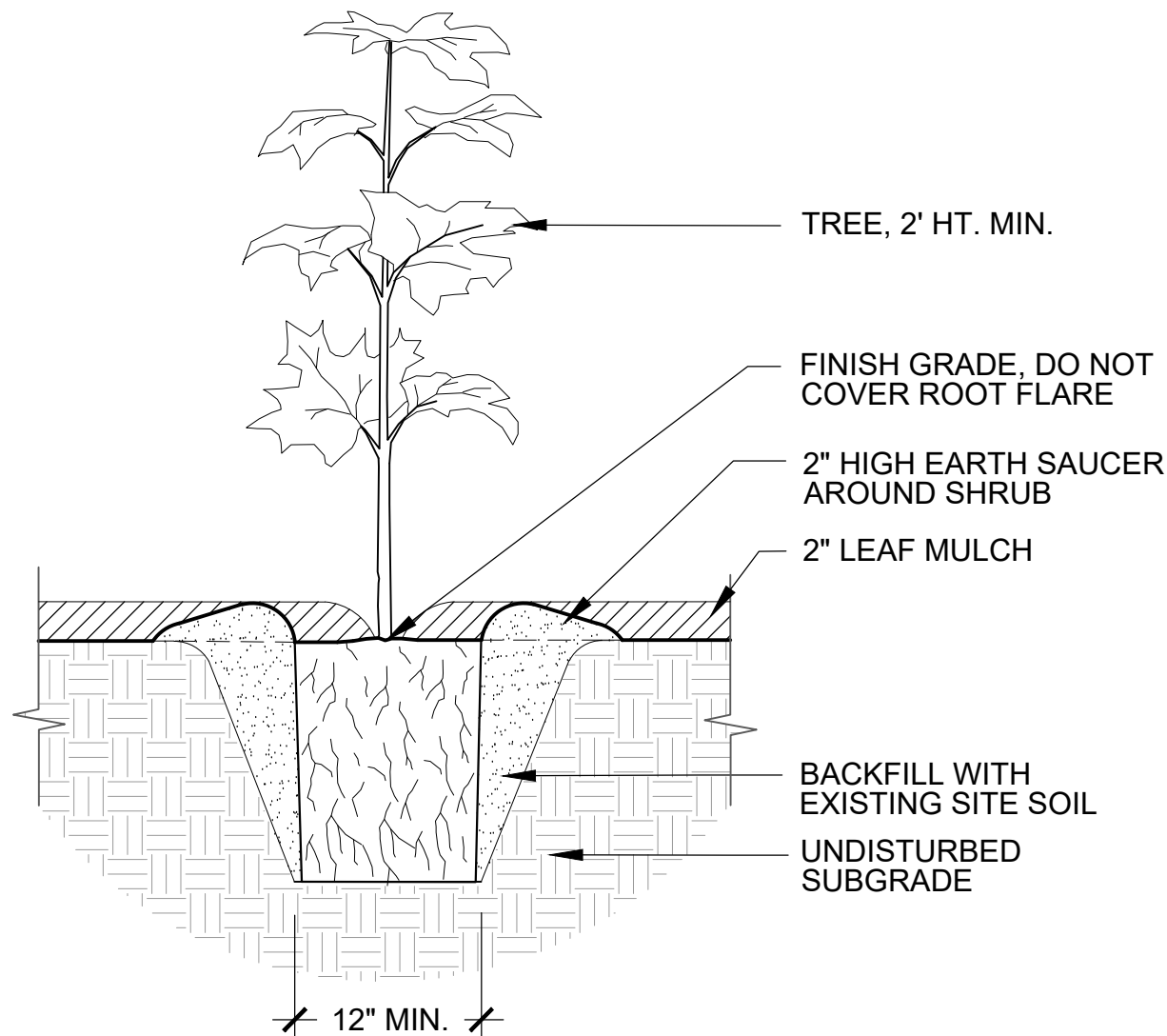
4 PLUG PLANTING
SCALE: NTS



3 SHRUB/FERN PLANTING
SCALE: NTS



2 TUBELING PLANTING
SCALE: NTS



1 TREE PLANTING (2' HT)
SCALE: NTS

HATCH

27 Congress Street, Salem, MA 01970
tel. 978-740-0096 www.hatch.com

Client/Owner:

Town of Arlington Park & Recreation Commission
422 Summer St.
Arlington, MA 02474

Stamp:



Project:
SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
RECORD SET

Job Number:
H-355321
Date:
July 31, 2020
Drawn By:
A. Keel
Designed By:
H. Holmes, G. Johnson
Reviewed By:
H. Holmes, D. Bitsko

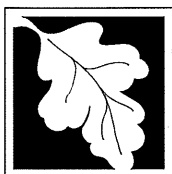
Revisions
Number: Description: Date:

Sheet Title:

PLANTING DETAILS
& PLANT SCHEDULE

Sheet No:

L-9



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

091-0299

MassDEP File #

eDEP Transaction #

Arlington

City/Town

A. General Information

Please note:
 this form has
 been modified
 with added
 space to
 accommodate
 the Registry
 of Deeds
 Requirements

Important:
 When filling
 out forms on
 the
 computer,
 use only the
 tab key to
 move your
 cursor - do
 not use the
 return key.



1. From: Arlington
 Conservation Commission
2. This issuance is for
 (check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions
3. To: Applicant:

| | |
|---------------------------------------|-----------------|
| <u>Jon</u> | <u>Marshall</u> |
| a. First Name | b. Last Name |
| <u>Arlington Park and Rec. Comm'n</u> | |
| c. Organization | |
| <u>422 Summer Street</u> | |
| d. Mailing Address | |
| <u>Arlington</u> | <u>MA</u> |
| e. City/Town | f. State |
| | <u>02474</u> |
| | g. Zip Code |
4. Property Owner (if different from applicant):

| | |
|--------------------------------|-----------------|
| <u>Jon</u> | <u>Marshall</u> |
| a. First Name | b. Last Name |
| <u>Town of Arlington Parks</u> | |
| c. Organization | |
| <u>730 Massachusetts Ave</u> | |
| d. Mailing Address | |
| <u>Arlington</u> | <u>MA</u> |
| e. City/Town | f. State |
| | <u>02476</u> |
| | g. Zip Code |
5. Project Location:

| | |
|---|----------------------|
| <u>Spy Pond</u> | <u>Arlington</u> |
| a. Street Address | b. City/Town |
| <u>ID: 9-3-1, 9-3-3, 9-4-1, 121-6-2</u> | |
| c. Assessors Map/Plat Number | d. Parcel/Lot Number |
| Latitude and Longitude, if known: | <u>42d41m0358s</u> |
| d. Latitude | <u>-71d15m0452s</u> |
| | e. Longitude |



Massachusetts Department of Environmental Protection
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A. General Information (cont.)

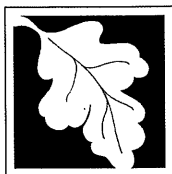
6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):
 Middlesex
 a. County
 5432; 3508
 c. Book
 b. Certificate Number (if registered land)
 478; 479
 d. Page
 7. Dates: July 20, 2018 August 16, 2018 September 5, 2018
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance
 8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):
 Spy Pond Edge & Erosion Control Project - Sheets EC-1, EC-2, SP-1, SP-2, L-1, L-2, L-3, L-4, L-5, L-6, L-7, L-8
 Hatch Associates Consultants, Inc. Hilary Homes, PE & Ralph Bitsko, RLA
 b. Prepared By c. Signed and Stamped by
 July 18, 2018 various
 d. Final Revision Date e. Scale
 f. Additional Plan or Document Title g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:
 Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:
 a. ☒ Public Water Supply b. ☐ Land Containing Shellfish c. ☒ Prevention of Pollution
 d. ☒ Private Water Supply e. ☒ Fisheries f. ☒ Protection of Wildlife Habitat
 g. ☒ Groundwater Supply h. ☒ Storm Damage Prevention i. ☒ Flood Control
 2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection
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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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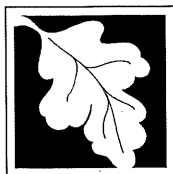
B. Findings (cont.)

Denied because:

- b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. ☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

| Resource Area | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|---|--|--|--------------------------|--------------------------|
| 4. <input checked="" type="checkbox"/> Bank | 1500 a. linear feet | 1455 b. linear feet | 1500 c. linear feet | 1455 d. linear feet |
| 5. <input checked="" type="checkbox"/> Bordering Vegetated Wetland | 85 a. square feet | 85 b. square feet | 85 c. square feet | 85 d. square feet |
| 6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways | 290 a. square feet 0 e. c/y dredged | 290 b. square feet 0 f. c/y dredged | 0 c. square feet | 0 d. square feet |
| 7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding | 17,300 a. square feet | 17,300 b. square feet | 17,300 c. square feet | 17,300 d. square feet |
| Cubic Feet Flood Storage | e. cubic feet | f. cubic feet | g. cubic feet | h. cubic feet |
| 8. <input type="checkbox"/> Isolated Land Subject to Flooding | a. square feet | b. square feet | | |
| Cubic Feet Flood Storage | c. cubic feet | d. cubic feet | e. cubic feet | f. cubic feet |
| 9. <input type="checkbox"/> Riverfront Area | a. total sq. feet | b. total sq. feet | | |
| Sq ft within 100 ft | c. square feet | d. square feet | e. square feet | f. square feet |
| Sq ft between 100-200 ft | g. square feet | h. square feet | i. square feet | j. square feet |



Massachusetts Department of Environmental Protection
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WPA Form 5 – Order of Conditions

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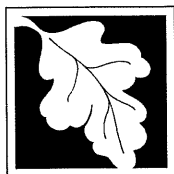
Arlington

City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

| | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|--|---|-------------------------|-------------------------|--------------------------|
| 10. <input type="checkbox"/> Designated Port Areas | Indicate size under Land Under the Ocean, below | | | |
| 11. <input type="checkbox"/> Land Under the Ocean | a. square feet | b. square feet | | |
| | c. c/y dredged | d. c/y dredged | | |
| 12. <input type="checkbox"/> Barrier Beaches | Indicate size under Coastal Beaches and/or Coastal Dunes below | | | |
| 13. <input type="checkbox"/> Coastal Beaches | a. square feet | b. square feet | c. nourishment cu yd | d. nourishment cu yd |
| 14. <input type="checkbox"/> Coastal Dunes | a. square feet | b. square feet | c. nourishment cu yd | d. nourishment cu yd |
| 15. <input type="checkbox"/> Coastal Banks | a. linear feet | b. linear feet | | |
| 16. <input type="checkbox"/> Rocky Intertidal Shores | a. square feet | b. square feet | | |
| 17. <input type="checkbox"/> Salt Marshes | a. square feet | b. square feet | c. square feet | d. square feet |
| 18. <input type="checkbox"/> Land Under Salt Ponds | a. square feet | b. square feet | | |
| | c. c/y dredged | d. c/y dredged | | |
| 19. <input type="checkbox"/> Land Containing Shellfish | a. square feet | b. square feet | c. square feet | d. square feet |
| 20. <input type="checkbox"/> Fish Runs | Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above | | | |
| | a. c/y dredged | b. c/y dredged | | |
| 21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | a. square feet | b. square feet | | |
| 22. <input type="checkbox"/> Riverfront Area | a. total sq. feet | b. total sq. feet | | |
| Sq ft within 100 ft | c. square feet | d. square feet | e. square feet | f. square feet |
| Sq ft between 100-200 ft | g. square feet | h. square feet | i. square feet | j. square feet |



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B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. ☐ Restoration/Enhancement *:

a. square feet of BVW

b. square feet of salt marsh

24. ☐ Stream Crossing(s):

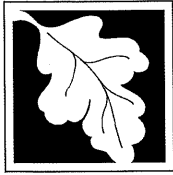
a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



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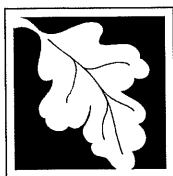
Arlington

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 091-0299 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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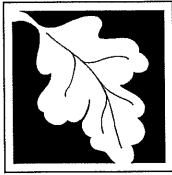
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
 - (1) ☐ is subject to the Massachusetts Stormwater Standards
 - (2) ☒ is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
 - i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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091-0299

MassDEP File #

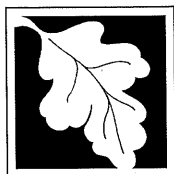
eDEP Transaction #

Arlington

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
- v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:
 - i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and
 - ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

091-0299

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Arlington

City/Town

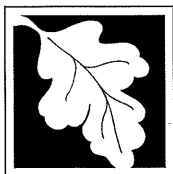
C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached Additional Special Conditions.

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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Arlington

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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☒ Yes ☐ No
2. The Arlington hereby finds (check one that applies):
Conservation Commission
 - a. ☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

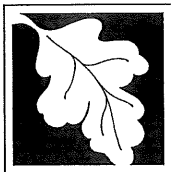
1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. ☒ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:
Arlington Wetlands Protection Bylaw
1. Municipal Ordinance or Bylaw

Title V, Art.
8
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):
See attached Additional Special Conditions.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

91-299

MassDEP File #

eDEP Transaction #

Arlington

City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

9/05/2018

1. Date of Issuance

2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

[Handwritten signatures of two individuals]

☒ by hand delivery on

September 5, 2018

Date

☐ by certified mail, return receipt requested, on

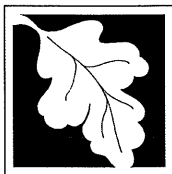
Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

091-0299

MassDEP File #

eDEP Transaction #

Arlington

City/Town

G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

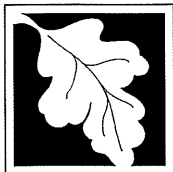
If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number: _____

**Request for Departmental Action Fee
Transmittal Form**

Provided by DEP _____

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Request Information

1. Location of Project

| | |
|-------------------------|-------------------------|
| a. Street Address _____ | b. City/Town, Zip _____ |
| c. Check number _____ | d. Fee amount _____ |

2. Person or party making request (if appropriate, name the citizen group's representative):

| | | | |
|-----------------------|----------------------------------|----------------|--|
| Name _____ | | | |
| Mailing Address _____ | | | |
| City/Town _____ | State _____ | Zip Code _____ | |
| Phone Number _____ | Fax Number (if applicable) _____ | | |

3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):

| | | | |
|-----------------------|----------------------------------|----------------|--|
| Name _____ | | | |
| Mailing Address _____ | | | |
| City/Town _____ | State _____ | Zip Code _____ | |
| Phone Number _____ | Fax Number (if applicable) _____ | | |

4. DEP File Number: _____

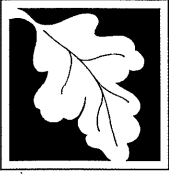
Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



B. Instructions

1. When the Departmental action request is for (check one):

- ☐ Superseding Order of Conditions – Fee: \$120.00 (single family house projects) or \$245 (all other projects)
- ☐ Superseding Determination of Applicability – Fee: \$120
- ☐ Superseding Order of Resource Area Delineation – Fee: \$120



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number: _____

Request for Departmental Action Fee Transmittal Form

Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Instructions (cont.)

Send this form and check or money order, payable to the *Commonwealth of Massachusetts*, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see <http://www.mass.gov/eea/agencies/massdep/about/contacts/>).
4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

DOCUMENTS REVIEWED

1. Notice of Intent for Ecological Restoration Limited Project - Spy Pond Erosion and Edge Control Project, by Hatch Associates Consultants, Inc, July 18, 2018, with attachments.
2. Plans titled "Spy Pond Edge & Erosion Control Project Notice of Intent Submittal" July 18, 2018, stamped by Hilary A. Holmes, Professional Engineer, and Ralph A. Bitsko, Registered Landscape Architect. Sheets: Cover Sheet, EC-1, EC-2, SP-1, SP-2, L-1, L-2, L-3, L-4, L-5, L-6, L-7, L-8.
3. NHESP comments from Misty-Anne Marold, e-mail dated August 2, 2018, to Duke Bitsko.

PROCEDURAL SUMMARY

The Conservation Commission held a public hearing on the Notice of Intent on August 2, 2018 and August 16, 2018. The Commission closed the hearing on August 16, 2018, deliberated and voted 5-0 (2 members absent) to approve the Project with conditions under the Wetlands Protection Act (the "Act") and voted 5-0 to approve the Project with conditions under the Arlington Wetlands Protection Bylaw (the "Bylaw").

FINDINGS OF FACT AND LAW
UNDER ARLINGTON WETLANDS PROTECTION BYLAW
AND WETLANDS PROTECTION ACT

- A. The Project as approved involves measures to control erosion and stabilize the bank in four areas of Spy Pond: Spy Pond Park, Scannell Field, Boys and Girls Club, and Spring Valley St.
- B. The shoreline has diverse vegetation, in some areas there is more forestry, in others more invasives. The rare Engelmann's umbrella sedge is present (marked in yellow on the site plans). Scannell Field includes Bank resource and consists primarily of Norway Maple. Spring Valley Street is similar in its conditions to Scannell Field. The edge of the pavement at Spring Valley Street has collapsed into the pond along with a tree, due to the erosion. There is no BVW, just Bank in this area. The Boys and Girls Club is primarily Bank with BVW. There will be 1,445 linear feet of Bank being restored (55 more was proposed between the boat ramp and North Beach but abandoned following NHESP comments) and 1,400 of BVW temporary altered for the two rock apron outfall repairs, and replaced in kind.
- C. Bio-engineered methods using coir fascines, invasive species management, and green infrastructure for stormwater management will be utilized. Two timber overlooks are proposed to restore the Bank by channeling people to areas with less sensitive habitat. The overlooks are currently stone and do not jut into the water, the proposed improvements jut about 6.5-7 feet out into the water.

ARLINGTON CONSERVATION COMMISSION

ORDER OF CONDITIONS

Spy Pond Shoreline Erosion Control Project

DEP FILE NO. 091-0299

- D. There are areas where new planting beds will go in. There will be coir fascines with planting plugs. There will be no work in the BVW, just along shoreline within Spy Pond Park.
- E. The Applicant eliminated the coir fascine in the area between North Beach and the boat ramp to comply with their NHESP's recommendations and will provide revised project plan sheets to reflect that change.
- F. At Scannell Field a shallow grass swale is proposed to help channel the runoff from the field and capture it before it runs to the shoreline. A new chain link fence to replace the old one is also proposed and the bottom of the fence will be raised 4.0 to 3.5 inches from the existing grade to allow for wildlife passage. The current dirt path is proposed to extend from Linwood Circle down to the shoreline and along the shoreline out to a timber overlook.
- G. All overlooks are proposed to be ADA compliant. Boulders are proposed in this area to stabilize the path, double and single stack coir fascines are proposed in this area as well. Existing informal footpaths will be revegetated with plug planting. Park pathways will, under a Determination of Applicability, have the stone dust replaced with a porous paving material throughout the park.
- H. In the area west of the Boys and Girls Club, there will be a 10 ft. wide strip of no-mow turf grass from the back of sidewalk. The timber guardrail is 5 feet from the back of sidewalk. The no mow is typically 6 inches in height, mowed once a year. There would be some educational signage here to describe the new bee and butterfly "pollinator" habitat, this area is included in the landscape management plan. Single coir fascine and stormwater outfall repair are also included in the restoration of this area.
- I. Within Spring Valley Street, a bio-retention basin is proposed to collect the storm runoff, the slope will be addressed and some regraded will occur close to the shoreline. A planting bed and a double stacked coir fascine are also proposed. Asphalt will be removed as part of this work.
- J. The following Resource Areas are present on the site: Bordering Land Subject to Flooding (BLSF: the 100-year (1 % chance) floodplain), Bordering Vegetated Wetland (BVW), Bank, and Buffer Zone (Act)/Associated Upland Resource Area (Bylaw) and Land Under Water Bodies (LUWB). The Commission finds accurate the delineation of Resource Areas shown on the approved Project Plan. Resources in Spy Pond Park include BVW, Buffer Zones, Bank, and Floodplain.
- K. The Resource Areas on and adjacent to the Property are significant to the Resource Area values protected by the Act and by the Bylaw, as specified in the Bylaw Regulations and 310 CMR 10.00 for each Resource Area.
- L. Based on the testimony at the public hearing, and review of the application materials and the documents listed above submitted during the public hearing, the Commission concludes that the proposed Project qualifies as an Ecological Restoration Limited Project under 310 CMR 10.53(3) and the work as conditioned will not have significant or cumulative effects upon the interests of the Resource Area values of the Arlington Wetlands Bylaw when the conditions imposed are implemented to protect the Resource Area values.

ADDITIONAL SPECIAL CONDITIONS

In addition to the General Conditions (numbered 1 – 20 above), the Project is subject to the following Additional Special Conditions (under both the Act and Bylaw):

21. Work permitted by this Order and Permit shall conform to the Notice of Intent, the approved plans and documents (listed above and/or per these special conditions), and oral representations (as recorded in hearing minutes) submitted or made by the Applicant and the Applicant's agents or representatives, as well as any plans and other data, information or representations submitted per these Conditions and approved by the Commission.
22. The provisions of this Order and Permit shall apply to and be binding upon the Applicant and Applicant's assignees, tenants, property management company, employees, contractors, and agents.
23. Prior to work commencing, the Applicant shall provide revisions to Plan Sheets L-1 and L-8 reflecting project changes in response to NHESP comments.
24. No work shall be started under this Order until: (a) all other required permits or approvals have been obtained and (b) the appeal period of ten (10) business days from the date of issue of this Order has expired without any appeal being filed and (c) this Order has been recorded in the Registry of Deeds. No work shall be started under this Permit until all other necessary permits or approvals have been obtained.
25. The Applicant shall ensure that a copy of this Order of Conditions and Permit for work, with any referenced plans, is available on site at all times, and that contractors, site managers, foremen, and sub-contractors understand its provisions.
26. Prior to starting work, the Applicant shall submit to the Conservation Agent the names and 24-hour phone numbers of project managers or the persons responsible for site work or mitigation.
27. Before work begins, erosion and sediment controls shall be installed at the limits of the work area per the Project Plans. These will include a silt fence and 12 inch diameter compost filter socks around the entire work area (haybales are not allowed and silt socks are preferred).
28. The contractor shall contact the Conservation Agent (781-316-3012) to arrange for a pre-construction meeting with the on-site project manager to walk through the Order of Conditions, confirm the wash out location, and walk the site to confirm the installation and placement of erosion controls prior to the start of any grading or construction work.
29. The contractor shall provide written Notice of the work start date to the Conservation Agent 48 hours prior to start of work.
30. All dumpsters must be covered at the end of each work day.

ARLINGTON CONSERVATION COMMISSION

ORDER OF CONDITIONS

Spy Pond Shoreline Erosion Control Project

DEP FILE NO. 091-0299

31. Areas that are disturbed by construction and access activities shall as soon as possible be brought to final grade and reseeded and restabilized, and shall be done so prior to the removal of the erosion control barrier.
32. In no case may waste water be discharged into or onto Resource Areas on or adjacent to the site. In no case may waste water be placed in stormdrains. Any spillage of materials shall be cleaned up promptly.
33. Any dirt or debris spilled or tracked onto any paved streets shall be swept up and removed daily.
34. No refueling or maintenance of machinery shall be allowed within any Resource Area.
35. The Commission, its employees and its agents shall have the right of entry onto the site to inspect for compliance with the terms of this Order of Conditions and Permit until a Certificate of Compliance has been issued.
36. When requesting a Certificate of Compliance for this Order of Conditions, the Applicant must submit a written statement from a Massachusetts professional engineer, registered land surveyor, or registered landscape architect certifying that the completed work complies with the plans referenced in this Order, or provide an as-built plan and statement describing any differences.
37. The Applicant shall implement tree protection measures for any trees located on the site as specified in the Commission's Bylaw Regulations.
38. Pervious surfaces shown on the project plans shall be maintained and not be replaced by impervious surfaces. **This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.**
39. The landscaping and vegetative areas shall be installed and maintained according to the standards of the American Association of Nurserymen (AAN). **This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.**
40. The chain link fence to be installed at Scannell Field shall be raised at the bottom 3.5 – 4.0 inches from the ground to allow for wildlife passage and said height shall be maintained in perpetuity. **This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.**

Applicant

Arlington Park and Recreation Commission

422 Summer Street
Arlington, Massachusetts 02474

Ecological Restoration Limited
Project Notice of Intent
Application
Spy Pond Erosion and Edge
Control Project

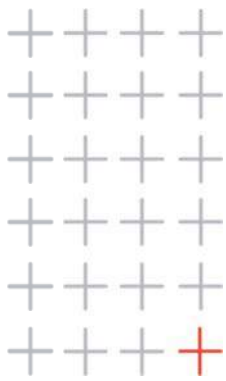
Subject Property

Assessor's Map 9, Block 3 - Parcels 1 and 3, Block 4 - Parcel 1
Assessor's Map 121, Block 6 - Parcel 2
Arlington, Massachusetts

Representative

Hatch Associates Consultants, Inc.
27 Congress Street, Suite 508
Salem, Massachusetts 01970

July 18, 2018



July 18, 2018

Reference: H/355321/001, 0030

Arlington Conservation Commission
Town Hall, 730 Massachusetts Ave
Arlington, MA 02476

Subject: Ecological Restoration Limited Project Notice of Intent
Spy Pond Edge Protection & Erosion Control Project

Dear Members of the Conservation Commission,

On behalf of the Arlington Parks and Recreation Commission, Hatch Associates Consultants, Inc. (Hatch) is submitting this Ecological Restoration Limited Project Notice of Intent (NOI) Application pursuant to the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection for the proposed shoreline stabilization and ecological restoration activities on the Town-owned properties located at Spy Pond Park, Scannell Field, Spring Valley, and area west of the Boys and Girls Club.

Enclosed please find (9) copies of the Ecological Restoration Limited Project NOI submission package.

We look forward to meeting with you at the August 2, 2018 Public Hearing. If you have any questions regarding this application or require additional information, please contact me at (978)-224-3123 or at duke.bitsko@hatch.com.

Respectfully,

HATCH

Duke Bitsko, PLA
Director, Interdisciplinary Design

Cc: DEP Northeast Regional Office, NHESP

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FIGURE 1: USGS TOPOGRAPHIC QUADRANGLE
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FIGURE 3: MASSGIS ORTHOPHOTO
FIGURE 4: MASSGIS ORTHO & NHESP MAP

APPENDIX B: SITE CHARACTERIZATION REPORT

APPENDIX C: BOTANICAL SURVEY REPORT AND VPRS REPORT

APPENDIX D: CORRESPONDENCE WITH NHESP

APPENDIX E: OPERATION AND MAINTENANCE PLAN

APPENDIX F: DRAWING SET

L-0: COVER SHEET
EC-1 & EC-2: EXISTING CONDITIONS & RESOURCE AREA PLAN
SP-1 & SP-2: SITE PREPARATION PLAN
L-1 & L-2: SITE PLANS
L-3: PLAN ENLARGEMENTS
L-4 TO L-8: SITE DETAILS

SPY POND EDGE PROTECTION AND EROSION CONTROL PROJECT
WPA FORM 3 – NOTICE OF INTENT



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Spy Pond

a. Street Address

Arlington

b. City/Town

02474

c. Zip Code

Latitude and Longitude:

42.410358 N

d. Latitude

-71.150452

e. Longitude

Assessor's ID: 9-3-1, 9-3-3, 9-4-1, 121-6-2

f. Assessors Map/Plat Number

g. Parcel /Lot Number

2. Applicant:

Jon

a. First Name

Marshall

b. Last Name

Arlington Park and Recreation Commission

c. Organization

422 Summer Street

d. Street Address

Arlington

e. City/Town

MA

f. State

02474

g. Zip Code

781-316-3880

h. Phone Number

n/a

i. Fax Number

jmarshall@town.arlington.ma.us

j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Same as above

a. First Name

b. Last Name

Town of Arlington Parks

c. Organization

730 Massachusetts Ave. (Annex)

d. Street Address

Arlington

e. City/Town

MA

f. State

02476

g. Zip Code

781-316-3010

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Duke

a. First Name

Bitsko

b. Last Name

Hatch Associates Consultants, Inc.

c. Company

27 Congress Street, Suite 508

d. Street Address

Salem

e. City/Town

MA

f. State

01970

g. Zip Code

978-224-3123

h. Phone Number

i. Fax Number

duke.bitsko@hatch.com

j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

Fee Exempt - Municipal Project

a. Total Fee Paid

n/a

b. State Fee Paid

n/a

c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

The proposed ecological restoration project consists of restoring degraded areas of Inland Bank along Town-owned properties on Spy Pond by using bioengineered bank stabilization treatments, enhancement plantings, invasive species management, green infrastructure stormwater management, & installing two timber overlook structures on helical pier footings

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- | | |
|---|---|
| 1. <input type="checkbox"/> Single Family Home | 2. <input type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Commercial/Industrial | 4. <input type="checkbox"/> Dock/Pier |
| 5. <input type="checkbox"/> Utilities | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input type="checkbox"/> Transportation |
| 9. <input checked="" type="checkbox"/> Other | |

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

310 CMR 10.53(4)(e)(5) Other: Planting of vegetation to improve habitat value; restoration/enhancement of rare species habitat; fill removal and regrading; invasive species

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR 10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Middlesex

a. County

5432; 3508

c. Book

b. Certificate # (if registered land)

478; 479

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

- ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
- ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|--|
| a. <input checked="" type="checkbox"/> Bank | 1,530 1. linear feet | 1,530 restore 2. linear feet |
| b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland | 85 1. square feet | 85 in-kind replacement 2. square feet |
| c. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways | 290 1. square feet 3. cubic yards dredged | none 2. square feet |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding | 17,300 1. square feet 39 3. cubic feet of flood storage lost | 17,300 2. square feet 360 4. cubic feet replaced |
| e. <input type="checkbox"/> Isolated Land Subject to Flooding | 1. square feet 2. cubic feet of flood storage lost | 3. cubic feet replaced |

- f. ☐ Riverfront Area
1. Name of Waterway (if available) - **specify coastal or inland**
2. Width of Riverfront Area (check one):
- ☐ 25 ft. - Designated Densely Developed Areas only
- ☐ 100 ft. - New agricultural projects only
- ☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

| <u>Resource Area</u> | <u>Size of Proposed Alteration</u> | <u>Proposed Replacement (if any)</u> |
|---|---|--|
| a. <input type="checkbox"/> Designated Port Areas | Indicate size under Land Under the Ocean, below | |
| b. <input type="checkbox"/> Land Under the Ocean | 1. square feet _____ 2. cubic yards dredged _____ | |
| c. <input type="checkbox"/> Barrier Beach | Indicate size under Coastal Beaches and/or Coastal Dunes below | |
| d. <input type="checkbox"/> Coastal Beaches | 1. square feet _____ | 2. cubic yards beach nourishment _____ |
| e. <input type="checkbox"/> Coastal Dunes | 1. square feet _____ | 2. cubic yards dune nourishment _____ |
| | <u>Size of Proposed Alteration</u> | <u>Proposed Replacement (if any)</u> |
| f. <input type="checkbox"/> Coastal Banks | 1. linear feet _____ | |
| g. <input type="checkbox"/> Rocky Intertidal Shores | 1. square feet _____ | |
| h. <input type="checkbox"/> Salt Marshes | 1. square feet _____ | 2. sq ft restoration, rehab., creation _____ |
| i. <input type="checkbox"/> Land Under Salt Ponds | 1. square feet _____ | |
| | 2. cubic yards dredged _____ | |
| j. <input type="checkbox"/> Land Containing Shellfish | 1. square feet _____ | |
| k. <input type="checkbox"/> Fish Runs | Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above | |
| | 1. cubic yards dredged _____ | |
| l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | 1. square feet _____ | |
| 4. <input type="checkbox"/> Restoration/Enhancement | | |
| If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here. | | |
| a. square feet of BVW _____ | b. square feet of Salt Marsh _____ | |

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____

b. number of replacement stream crossings _____



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C. Other Applicable Standards and Requirements

- ☒ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

***Project is located within Priority Habitat & undergoing separate MESA Review.**

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☐ Yes ☐ No

If yes, include proof of mailing or hand delivery of NOI to:

**Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581**

b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

- c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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C. Other Applicable Standards and Requirements (cont'd)

- (c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_fee_schedule.htm).
Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

- (d) ☐ Vegetation cover type map of site
- (e) ☐ Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

- a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.



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C. Other Applicable Standards and Requirements (cont'd)

Online Users:

Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
- a. ☐ Yes ☐ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
- b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
- a. ☐ Yes ☐ No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
- a. ☐ Yes ☐ No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
- a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. ☐ A portion of the site constitutes redevelopment
 3. ☐ Proprietary BMPs are included in the Stormwater Management System.
- b. ☐ No. Check why the project is exempt:
1. ☐ Single-family house
 2. ☐ Emergency road repair
 3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- ☒ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☐ List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.
6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
8. ☐ Attach NOI Wetland Fee Transmittal Form
9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name



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Provided by MassDEP:

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F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant

2. Date

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any)

6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a copy of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

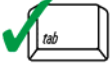
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

A. Applicant Information

*** Municipal Project – Exempt from Filing Fees**

1. Location of Project:

0 Pond Lane; Spring Valley

a. Street Address

Arlington

b. City/Town

N/A – Municipal Project, Exempt

d. Fee amount

c. Check number

2. Applicant Mailing Address:

Jon

a. First Name

Marshall

b. Last Name

Arlington Park and Recreation Commission

c. Organization

422 Summer Street

d. Mailing Address

Arlington

e. City/Town

MA

f. State

02474

g. Zip Code

781-316-3880

h. Phone Number

none

i. Fax Number

jmarshall@town.arlington.ma.us

j. Email Address

3. Property Owner (if different):

same as above

a. First Name

b. Last Name

Town of Arlington Parks

c. Organization

730 Massachusetts Ave. (Annex)

d. Mailing Address

Arlington

e. City/Town

MA

f. State

02476

g. Zip Code

781-316-3010

h. Phone Number

none

i. Fax Number

jmarshall@town.arlington.ma.us

j. Email Address

B. Fees

Fee should be calculated using the following process & worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.



| Step 1/Type of Activity | Step 2/Number of Activities | Step 3/Individual Activity Fee | Step 4/Subtotal Activity Fee |
|---------------------------|-----------------------------|--------------------------------|------------------------------|
| N/A - Municipal Project | N/A | N/A | N/A - Exempt |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Step 5/Total Project Fee: | | | N/A - Exempt |

| | |
|--------------------------|--------------------------------------|
| Total Project Fee: | a. Total Fee from Step 5 |
| My share of filing Fee: | b. 1/2 Total Fee less \$12.50 |
| My share of filling Fee: | c. 1/2 Total Fee plus \$12.50 |

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

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WPA Form 3 – Notice of Intent

Appendix A: Ecological Restoration Limited Project Checklists

City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Checklist

This Ecological Restoration Limited Project Eligibility Checklist guides the applicant in determining if their project is eligible to file as an Inland or Coastal Ecological Restoration Limited Project (310 CMR 10.53(4) or 310 CMR 10.24(8) respectively). These criteria must be met when submitting the Ecological Restoration Limited Project Notice of Intent to ensure that the restoration and improvement of the natural capacity of a Resource Area(s) to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

Regulatory Features of All Coastal and Inland Ecological Restoration Limited Projects

- (a) May result in the temporary or permanent loss of or conversion of Resource Area: An Ecological Restoration Limited Project that meets the requirements of 310 CMR 10.24(8) may result in the temporary or permanent loss of Resource Areas and/or the conversion of one Resource Area to another when such loss is necessary to the achievement of the project's ecological restoration goals.
- (b) Exemption from wildlife habitat evaluation: A NOI for an Ecological Restoration Limited Project that meets the minimum requirements for Ecological Restoration Projects and for a MassDEP Combined Application outlined in 310 CMR 10.12(1) and (2) is exempt from providing a wildlife habitat evaluation (310 CMR 10.60).
- (c) The following are considerations for applicants filing an Ecological Restoration Limited Project NOI and for the issuing authority approving a project as an Ecological Restoration Limited Project:
- ☒ The condition of existing and historic Resource Areas proposed for restoration.
 - ☒ Evidence of the extent and severity of the impairment(s) that reduce the capacity of the Resource Areas to protect and sustain the interests identified in M.G.L. c. 131, § 40.
 - ☒ The magnitude and significance of the benefits of the Ecological Restoration Project in improving the capacity of the affected Resource Areas to protect and sustain the other interests identified in M.G.L. c. 131, § 40.
 - ☒ The magnitude and significance of the impacts of the Ecological Restoration Project on existing Resource Areas that may be modified, converted and/or lost and the interests for which said Resource Areas are presumed significant in 310 CMR 10.00, and the extent to which the project will:
 - a. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals.
 - b. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals.
 - c. utilize best management practices such as erosion and siltation controls and proper construction sequencing to avoid and minimize adverse construction impacts to resource areas and the interests identified in M.G.L. c. 131, § 40.



WPA Form 3 – Notice of Intent

Appendix A: Ecological Restoration Limited Project Checklists

City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8))

Complete this Eligibility Criteria Checklist **before** filling out a Notice of Intent Application to determine if your project qualifies as a Coastal Ecological Restoration Limited Project. (310 CMR 10.24(8)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects

Notwithstanding the requirements of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and the Wildlife Habitat evaluations in 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.24(8)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in the WPA M.G.L. provided that the project meets all the requirements in 310 CMR 10.24(8).

- ☐ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.24(8)(e)].
- ☐ Tidal Restoration.
- ☐ Shellfish Habitat Restoration.
- ☐ Other Ecological Restoration Limited Project Type.
- ☐ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.
 - ☐ Protection of public or private water supply.
 - ☐ Protection of ground water supply.
 - ☐ Flood control.
 - ☐ Storm damage prevention.
 - ☐ Prevention of pollution.
 - ☐ Protection of land containing shellfish.
 - ☐ Protection of fisheries.
 - ☐ Protection of wildlife habitat.
- ☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will not have any adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.



WPA Form 3 – Notice of Intent

Appendix A: Ecological Restoration Limited Project Checklists

City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects (cont.)

- ☐ If the project is located in a Coastal Dune or Barrier Beach, the project avoids and minimizes armoring of the Coastal Dune or Barrier Beach to the maximum extent practicable.
- ☐ The project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and 310 CMR 10.24(9) and (10).

Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

- ☐ This Ecological Restoration Limited Project application meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.24(8)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below.

☐ Tidal Restoration Projects

- ☐ A project to restore tidal flow that will not significantly increase flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.

☐ Shellfish Habitat Restoration Projects

- ☐ The project has received a Special Projects Permit from the Division of Marine Fisheries or, if a municipality, has received a shellfish propagation permit.
- ☐ The project is made of cultch (e.g., shellfish shells from oyster, surf or ocean clam) or is a structure manufactured specifically for shellfish enhancement (e.g., reef blocks, reef balls, racks, floats, rafts, suspended gear).

☐ Other Ecological Restoration Projects that meet the criteria set forth in 310 CMR 10.24(8)(a) through (d).

- ☐ Restoration, enhancement, or management of Rare Species habitat.
- ☐ Restoration of hydrologic and habitat connectivity.
- ☐ Removal of aquatic nuisance vegetation to impede eutrophication.
- ☐ Thinning or planting of vegetation to improve habitat value.
- ☐ Fill removal and re-grading.
- ☐ Riparian corridor re-naturalization.
- ☐ River floodplain re-connection.



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Appendix A: Ecological Restoration Limited Project Checklists

City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

- ☐ In-stream habitat enhancement.
- ☐ Remediation of historic tidal wetland ditching.
- ☐ Eelgrass restoration.
- ☐ Invasive species management.
- ☐ Installation of fish passage structures.
- ☐ Other. Describe: _____
- ☐ This project involves the construction, repair, replacement or expansion of public or private infrastructure (310 CMR 10.24(9)).
 - ☐ The NOI attachment labeled _____ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
 - ☐ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.
- ☐ This project proposes to replace an existing stream crossing (310 CMR 10.24(10)). The crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI. The crossing type:
 - ☐ Replaces an existing non-tidal crossing that is part of an Anadromous/Catadromous Fish Run (310 CMR 10.35)
 - ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.
- ☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been considered: site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:
 - ☐ The potential for downstream flooding;
 - ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
 - ☐ Potential for erosion and head-cutting;
 - ☐ Stream stability;
 - ☐ Habitat fragmentation caused by the crossing;
 - ☐ The amount of stream mileage made accessible by the improvements;
 - ☐ Storm flow conveyance;



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Appendix A: Ecological Restoration Limited Project Checklists

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

- ☐ Engineering design constraints specific to the crossing;
- ☐ Hydrologic constraints specific to the crossing;
- ☐ Impacts to wetlands that would occur by improving the crossing;
- ☐ Potential to affect property and infrastructure; and
- ☐ Cost of replacement.

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4))

Complete this Eligibility Criteria Checklist **before** filling out a Notice of Intent Application to determine if your project qualifies as an Inland Ecological Restoration Limited Project. (310 CMR 10.53(4)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

General Eligibility Criteria for All Inland Ecological Restoration Limited Projects

Notwithstanding the requirements of any other provision of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.53(4)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, provided that:

- ☒ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.53(4)(e)].
 - ☐ Dam Removal
 - ☐ Freshwater Stream Crossing Repair and Replacement
 - ☐ Stream Daylighting
 - ☐ Tidal Restoration
 - ☐ Rare Species Habitat Restoration
 - ☐ Restoring Fish Passageways
 - ☒ Other (describe project type): Planting vegetation to improve habitat; restoration & enhancement of rare species habitat; fill removal & regrade



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Appendix A: Ecological Restoration Limited Project Checklists

City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

General Eligibility Criteria for All Inland Ecological Restoration Limited Projects

- ☒ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.
- ☐ Protection of public or private water supply
 - ☐ Protection of ground water supply
 - ☒ Flood control
 - ☒ Storm damage prevention
 - ☒ Prevention of pollution
 - ☐ Protection of land containing shellfish
 - ☐ Protection of fisheries
 - ☒ Protection of wildlife habitat
- *Project is located within Priority Habitat & undergoing separate MESA Review.**
- ☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will have no adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.
- ☐ The project will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters and the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3).
- ☐ If the project involves the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification has been applied for or obtained.
- ☒ The project complies with all applicable provisions of 310 CMR 10.53(1), (2), (7), and (8).



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Appendix A: Ecological Restoration Limited Project Checklists

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

Additional Eligibility Criteria for Specific Inland Ecological Restoration Limited Project Types

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

- ☒ This project application meets the eligibility criteria for Ecological Restoration Limited Project in accordance with [310 CMR 10.53(4)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below:

☐ **Dam Removal**

- ☐ Project is consistent with MassDEP's 2007 Dam Removal Guidance.

☐ **Freshwater Stream Crossing Repair and Replacement.** The project as proposed and the NOI describes how:

- ☐ Meeting the eligibility criteria set forth in 310 CMR 10.13 would result in significant stream instability or flooding hazard that cannot otherwise be mitigated, and site constraints make it impossible to meet said criteria.
- ☐ The project design ensures that the stability of the bank is NOT impaired.
- ☐ To the maximum extent practicable, the project provides for the restoration of the stream upstream and downstream of the structure as needed to restore stream continuity and eliminate barriers to aquatic organism movement.
- ☐ The project complies with the requirements of 310 CMR 10.53(7) and (8).

☐ **Stream Daylighting Projects**

- ☐ The project meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.53(4)(a) through (d)] and as proposed the NOI describes how the proposed project meets to the maximum extent practicable, consistent with the project's ecological restoration goals, all the performance standards for Bank and Land Under Water Bodies and Waterways.
- ☐ The project meets the requirements of 310 CMR 10.12(1) and (2) and a wildlife habitat evaluation is not included in the NOI.

☐ **Tidal Restoration Project**

- ☐ Restores tidal flow.
- ☐ the project, including any proposed flood mitigation measures, will not significantly increase flooding or storm damage to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.



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Appendix A: Ecological Restoration Limited Project Checklists

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

- ☒ **Other Ecological Restoration Projects** that meet the criteria set forth in 310 CMR 10.53 (4) (a) through (d).
 - ☒ Restoration, enhancement, or management of Rare Species habitat.
 - ☐ Restoration of hydrologic and habitat connectivity.
 - ☐ Removal of aquatic nuisance vegetation to impede eutrophication.
 - ☒ Thinning or planting of vegetation to improve habitat value.
 - ☐ Riparian corridor re-naturalization.
 - ☐ River floodplain re-connection.
 - ☐ In-stream habitat enhancement.
 - ☒ Fill removal and re-grading.
 - ☐ Flow restoration.
 - ☐ Installation of fish passage structures.
 - ☒ Invasive species management.
 - ☐ Other. Describe: _____
- ☒ This project involves the construction, repair, replacement or expansion of public or private infrastructure. (310 CMR 10.53(7))
 - ☒ The NOI attachment labeled Appendix E is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
 - ☒ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.
- ☐ This project replaces an existing stream crossing (310 CMR 10.53(8)). The crossing type:
 - ☐ Replaces an existing non-tidal crossing designed to comply with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI.
 - ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.



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Appendix A: Ecological Restoration Limited Project Checklists

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Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

- ☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been consider site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:
 - ☐ The potential for downstream flooding;
 - ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
 - ☐ Potential for erosion and head-cutting;
 - ☐ Stream stability;
 - ☐ Habitat fragmentation caused by the crossing;
 - ☐ The amount of stream mileage made accessible by the improvements;
 - ☐ Storm flow conveyance;
 - ☐ Engineering design constraints specific to the crossing;
 - ☐ Hydrologic constraints specific to the crossing;
 - ☐ Impacts to wetlands that would occur by improving the crossing;
 - ☐ Potential to affect property and infrastructure; and
 - ☐ Cost of replacement.



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Appendix A: Ecological Restoration Limited Project Checklists

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Required Actions (310 CMR 10.11)

Complete the Required Actions before submitting a Notice of Intent Application for an Ecological Restoration Project and submit a completed copy of this Checklist with the Notice of Intent.

- ☐ **Massachusetts Environmental Policy Act (MEPA) / Environmental Monitor**
<http://www.mass.gov/eea/agencies/mepa/submitting-notice-to-the-environmental-monitor.html>

For Ecological Restoration Limited Projects, there are no changes to MEPA requirements.

- ☒ Submit written notification at least 14 days prior to the filing of a Notice of Intent (NOI) to the Environmental Monitor for publication. A copy of the written notification is attached and provides at minimum:
- ☒ A brief description of the proposed project.
 - ☒ The anticipated NOI submission date to the conservation commission.
 - ☒ The name and address of the conservation commission that will review the NOI.
 - ☒ Specific details as to where copies of the NOI may be examined or acquired and where to obtain the date, time, and location of the public hearing.

- ☒ **Massachusetts Endangered Species Act (MESA) /Wetlands Protection Act Review**

- ☐ Preliminary Massachusetts Endangered Species Act Review from the Natural Heritage and Endangered Species Program (NHESP) has been met and the written determination is attached.

- ☐ Supplemental Information for Endangered Species Review has been submitted.

1. ☐ Percentage/acreage of property to be altered:

- a. Within Wetland Resource Area

Percentage/acreage

- b. Outside Wetland Resource Area

Percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

3. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work.

4. ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

5. ☐ Photographs representative of the site

6. ☐ MESA filing fee (fee information available at

http://www.mass.gov/dfwele/dfw/nhESP/regulatory_review/mesa/mesa_fee_schedule.htm)

***Project is located within Priority Habitat
& undergoing separate MESA Review.**



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Appendix A: Ecological Restoration Limited Project Checklists

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Required Actions (310 CMR 10.11) (cont.)

Make check payable to “Commonwealth of Massachusetts - NHESP” and mail to NHESP:

Natural Heritage & Endangered Species Program

MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

7. Projects altering 10 or more acres of land, also submit:

- a. ☐ Vegetation cover type map of site
- b. ☐ Project plans showing Priority & Estimated Habitat boundaries

OR Check One of the Following:

1. ☐ Project is exempt from MESA review.

***Project is located within Priority Habitat
& undergoing separate MESA Review.**

Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59 – see C4 below)

2. ☒ Separate MESA review ongoing.

Not yet provided - See Appendix E

a. NHESP Tracking #

7/19/18

b. Date submitted to NHESP

3. ☐ Separate MESA review completed. Include copy of NHESP “no Take” determination or valid Conservation & Management Permit with approved plan.

☐ Estimated Habitat Map of State-Listed Rare Wetlands Wildlife

If a portion of the proposed project is located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP), complete the portion below. To view habitat maps, see the **Massachusetts Natural Heritage Atlas** or view the maps electronically at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review>

- ☐ A preliminary written determination from Natural Heritage and Endangered Species Program (NHESP) must be obtained indicating that:

- ☐ Project will NOT have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP.

- ☐ Project will have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP. A copy of NHESP’s written preliminary determination in accordance with 310 CMR 10.11(2) is attached. This specifies:

- ☐ Date of the map: _____



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Appendix A: Ecological Restoration Limited Project Checklists

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Required Actions (310 CMR 10.11) (cont.)

- ☐ If the Rare Species identified is/are likely to continue to be located on or near the project, and if so, whether the Resource Area to be altered is in fact part of the habitat of the Rare Species.
- ☐ That if the project alters Resource Area(s) within the habitat of a Rare Species:
- ☐ The Rare Species is identified;
- ☐ NHESP's recommended changes or conditions necessary to ensure that the project will have no short or long term adverse effect on the habitat of the local population of the Rare Species is provided; or
- ☐ An approved NHESP habitat management plan is attached with this Notice of Intent.

Send the request for a preliminary determination to:
Natural Heritage & Endangered Species Program
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

☐ Division of Marine Fisheries

- ☐ If the project will occur within a coastal waterbody with a restricted Time of Year, [see Appendix B of the Division of Marine Fisheries (DMF) Technical Report TR 47 "Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects" dated April 2011
<http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NEGP/MADMFTTR-47.pdf>].
- ☐ Obtain a DMF written determination stating:
 - ☐ The proposed work does NOT require a TOY restriction.
 - ☐ The proposed work requires a TOY restriction. Specific recommended TOY restriction and recommended conditions on the proposed work is attached.
- ☐ If the project may affect a diadromous fish run [re: Division of Marine Fisheries (DMF) Technical Reports TR 15 through 18, dated 2004:
<http://www.mass.gov/eea/agencies/dfg/dmf/publications/technical.html>]
- ☐ Obtain a DMF written determination stating:
 - ☐ The design specifications and operational plan for the project are compatible with the passage requirements of the fish run.
 - ☐ The design specifications and operational plan for the project are not compatible with the passage requirements of the fish run.



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Appendix A: Ecological Restoration Limited Project Checklists

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Required Actions (310 CMR 10.11) (cont.)

Send the request for a written or electronic determination to:

South Shore – Cohasset to Rhode Island border,
and the Cape & Islands:

Division of Marine Fisheries –
South Coast Field Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore – Hull to New Hampshire border:

Division of Marine Fisheries –
North Shore Field Station
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

☐ **Division of Fisheries and Wildlife** – <http://www.mass.gov/eea/agencies/dfg/dfw/>

- ☐ Projects that involve silt-generating, in-water work that will impact a non-tidal perennial river or stream and the in-water work will not occur between May 1 and August 30.
 - ☐ Obtain a written determination from the Division of Fisheries and Wildlife (DFW) as to whether the proposed work requires a TOY restriction.
 - ☐ The proposed work does NOT require a TOY restriction.
 - ☐ The proposed work requires a TOY restriction. The DFW determination with TOY restriction and other conditions is attached.

☐ **MassDEP Water Quality Certification**

- ☐ Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water (ORW). A copy and proof of the MassDEP Water Quality Certification pursuant to 314 CMR 9.00 is attached to the NOI.
- ☐ This project is a Combined Permit Application for 401 Dredging and Restoration (BRP WW 26).

☐ **MassDEP Wetlands Restriction Order**

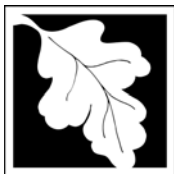
Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

☐ Yes ☒ No

☐ **Department of Conservation and Recreation**

Office of Dam Safety

- ☐ For Dam Removal Projects, obtain a written determination from the Department of Conservation and Recreation Office of Dam Safety that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00, a written determination that the dam removal does not require a permit under 302 CMR 10.00 or a permit authorizing the dam removal in accordance with 302 CMR 10.00 has been issued.



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Appendix A: Ecological Restoration Limited Project Checklists

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Required Actions (310 CMR 10.11) (cont.)

Areas of Critical Environmental Concern (ACECs)

Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

☐ Yes ☒ No

If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations).

Name of ACEC

Minimum Required Documents (310 CMR 10.12)

Complete the Required Documents Checklist below and provide supporting materials before submitting a Notice of Intent Application for an Ecological Restoration Project.

- ☒ This Notice of Intent meets all applicable requirements outlined in for Ecological Restoration Projects in 310 CMR 10.12. Use the checklist below to insure that all documentation is included with the NOI.

At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

- ☒ Description of the project's ecological restoration goals;
- ☒ The location of the Ecological Restoration Project;
- ☒ Description of the construction sequence for completing the project;
- ☒ A map of the Areas Subject to Protection Under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas.
- ☒ The method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.) is attached with documentation methodology.
- ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Drawing Set - L-0, EC-1 & EC-2, SP-1 & SP-2, L-1 thru L-8 (Appendix F)

a. Plan Title

Hatch

b. Prepared by

7/18/18

d. Final Revision Date

NOI Report including Appendix A thru F

f. Additional Plan or Document Title

Hatch (Duke Bitsko and Hilary Holmes)

c. Signed and Stamped by

1"=20' plans; sections and details vary

e. Scale

7/18/18

g. Date

- ☐ If there is more than one property owner, attach a list of these property owners not listed on this form.
- ☒ Attach NOI Wetland Fee Transmittal Form.



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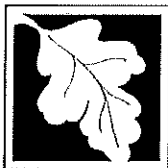
Appendix A: Ecological Restoration Limited Project Checklists

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Minimum Required Documents (310 CMR 10.12)

- ☒ An evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;
- ☒ A plan for invasive species prevention and control;
- ☒ The Natural Heritage and Endangered Species Program written determination in accordance with 310 CMR 10.11(2), if needed;
- ☐ Any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3), (4), (5), if needed;
- ☒ Proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1);
- ☒ A certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13;
- ☒ If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;
- ☐ If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00;
- ☐ If the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and
- ☐ If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.
- ☐ This project is subject to provisions of the MassDEP Stormwater Management Standards. A copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) is attached.
- ☐ Provide information as to whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Certification that the Ecological Restoration Project Meets the Eligibility Criteria

I hereby certify under penalties of perjury that the Ecological Restoration Project Notice of Intent application does not meet the Eligibility criteria for an Ecological Restoration Order of Conditions set forth in 310 CMR 10.13, but does meet the Eligibility Criteria for a Ecological Restoration Limited Project set forth in 10.24(8) or 10.53(4) whichever is applicable. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent

Jon Marshall, Director of Recreation

Printed Name of Applicant or Authorized Agent

7/18/2018
Date

The certification must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 2) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

SPY POND EDGE PROTECTION AND EROSION CONTROL PROJECT
AFFIDAVIT OF SERVICE

AFFIDAVIT OF SERVICE

I, Duke Bitsko, being duly sworn, do hereby state as follows: on July 18, 2018, I mailed a "Notification to Abutters" in compliance with the second paragraph of Massachusetts General Laws, Chapter 131, s.40, the DEP Guide to Abutter Notification dated April 8, 1994, and the Arlington Wetlands Protection Bylaw, Title V, Article 8 of the Town of Arlington Bylaws in connection with the following matter:

An Ecological Restoration Limited Project Notice of Intent filed under the Massachusetts Wetlands Protection Act (M.G.L., Chapter 131, s.40) by Hatch Associates Consultants, Inc., on behalf of the Applicant, the Town of Arlington, with the Conservation Commission on July 18, 2018 for the properties located at Spy Pond Park, Scannell Field, Spring Valley, and area west of the Boys and Girls Club in Arlington, Massachusetts.

The form of the notification, and a list of the abutters to whom it was provided and their addresses, are attached to this Affidavit of Service.

Signed under the pains and penalties of perjury, this 18th day of July 2018,



Duke Bitsko, PLA
Director, Interdisciplinary Design
Hatch Associates Consultants, Inc.

SPY POND EDGE PROTECTION AND EROSION CONTROL PROJECT
LETTER TO ABUTTERS



July 18, 2018

Reference: H/355321/001, 0030

CERTIFIED MAIL

RE: Ecological Restoration Limited Project Notice of Intent Application
Spy Pond Edge Protection & Erosion Control Project
Assessor's Map 9, Block 3 - Parcel 1 and 3, Block 4 - Parcel 1 and Map 121, Block 6 - Parcel 2
Arlington, MA

Dear Abutter,

On behalf of the Applicant, Arlington Parks and Recreation Commission, Hatch Associates Consultants, Inc. (Hatch) has filed an Ecological Restoration Limited Project Notice of Intent (NOI) Application with the Arlington Conservation Commission for the proposed bank stabilization and ecological restoration activities on the Town-owned properties located at Spy Pond Park, Scannell Field, Spring Valley Street, and area west of the Boys and Girls Club.

The Ecological Restoration Limited Project NOI Application and accompanying site plans are available for review by the public at the Arlington Conservation Commission. The Public Hearing will be held in the second floor conference room of the Town Hall Annex, 730 Massachusetts Avenue, Arlington on August 2, 2018 beginning at 8:15 pm, in accordance with the provisions of the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40), its implementing Regulations (310 CMR 10.00), and the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection. Further information regarding this application will be published at least five (5) business days in advance in The Arlington Advocate and will also be posted at least 48 hours in advance in the Arlington Town Hall.

Please do not hesitate to review the materials and/or attend the public hearing should you have questions or comments about the proposed project.

Respectfully,

HATCH

Duke Bitsko, PLA
Principle-in-Charge

Enclosure

SPY POND EDGE PROTECTION AND EROSION CONTROL PROJECT
ABUTTER NOTIFICATION FORM

**Notification to Abutters Under the
Massachusetts Wetlands Protection Act
And Arlington Wetlands Protection Bylaw**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

The Conservation Commission will hold a public hearing in the second floor conference room of the Town Hall Annex, 730 Massachusetts Avenue, Arlington on August 2, 2018 beginning at 8:15 pm in accordance with the provisions of the Mass. Wetlands Protection Act (M.G.L. Ch. 131, s. 40, as amended) and the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, for an Ecological Restoration Limited Project Notice of Intent from the Arlington Parks and Recreation Commission, for the bank stabilization and ecological restoration at Spy Pond Park, Scannell Field, Spring Valley Street, and area west of the Boys and Girls Club, within 100 feet of a wetland on Assessor's Map 9, Block 3-Parcel 1 and 3, Block 4-Parcel 1 and Map 121, Block 6-Parcel 2.

A copy of the application and accompanying plans are available for inspection Mon. – Thurs. 8am-4pm and Fri. 8am-noon at the Conservation Commission office, first floor of the Town Hall Annex, 730 Massachusetts Avenue, Arlington, MA 02476.

For more information call the applicant's representative at 978-224-3123 or Arlington Conservation Commission at 781-316-3012, or the DEP Northeast Regional Office at 978-694-3200.

NOTE: Notice of the Public Hearing will be published at least five (5) business days in advance in *The Arlington Advocate* and will also be posted at least 48 hours in advance in the Arlington Town Hall.

SPY POND EDGE PROTECTION AND EROSION CONTROL PROJECT
CERTIFIED LIST OF ABUTTERS

Abutters List[print this list](#)

Date: July 17, 2018

Subject Property Address: 0-LOT POND LN Arlington, MA

Subject Property ID: 9-3-3

Search Distance: 100 Feet

Prop ID: 8-2-1

Prop Location: 26-28 LINWOOD ST Arlington, MA

Owner: CONANT-HENSON DEBORAH

Co-Owner:

Mailing Address:

P.O. BOX 1039

ARLINGTON, MA 02474

BOARD OF ASSESSORS
TOWN HALL
ARLINGTON, MA 02476-----
Prop ID: 9-2-16

Prop Location: 41 WYMAN TERR Arlington, MA

Owner: FELTIN GEORGE M

Co-Owner:

Mailing Address:

41 WYMAN TERRACE

ARLINGTON, MA 02474

Prop ID: 9-2-22

Prop Location: 324 MASS AVE Arlington, MA

Owner: DE VINCENT ARTHUR TRS-ETAL

Co-Owner: C/O WALGREEN CO. #01864

Mailing Address:

PO BOX 1159

REAL ESTATE TAX DEPT

DEERFIELD, IL 60015

Prop ID: 9-2-30

Prop Location: 31 LINWOOD ST Arlington, MA

Owner: BAKER WILLA B

Co-Owner: MILLER MICHAEL A

Mailing Address:

31 LINWOOD ST

ARLINGTON, MA 02474

Prop ID: 9-3-1

Prop Location: 0-LOT POND LN Arlington, MA
Owner: TOWN OF ARLINGTON PARK
Co-Owner:
Mailing Address:
730 MASS AVE
ARLINGTON, MA 02476

Prop ID: 9-4-1
Prop Location: 0-LOT POND LN Arlington, MA
Owner: TOWN OF ARLINGTON PARK
Co-Owner:
Mailing Address:
730 MASS AVE
ARLINGTON, MA 02476

Prop ID: 9.A-2-17
Prop Location: 47 WYMAN TERR UNIT 1 Arlington, MA
Owner: HEBERT LARENA ANN/TR &
Co-Owner: JOHNSON LINDA ANN/TR
Mailing Address:
47 WYMAN TERRACE #1
ARLINGTON, MA 02474

Prop ID: 9.A-2-18
Prop Location: 47 WYMAN TERR UNIT 2 Arlington, MA
Owner: SALZER NANCY L
Co-Owner:
Mailing Address:
47 WYMAN TERRACE #2
ARLINGTON, MA 02474

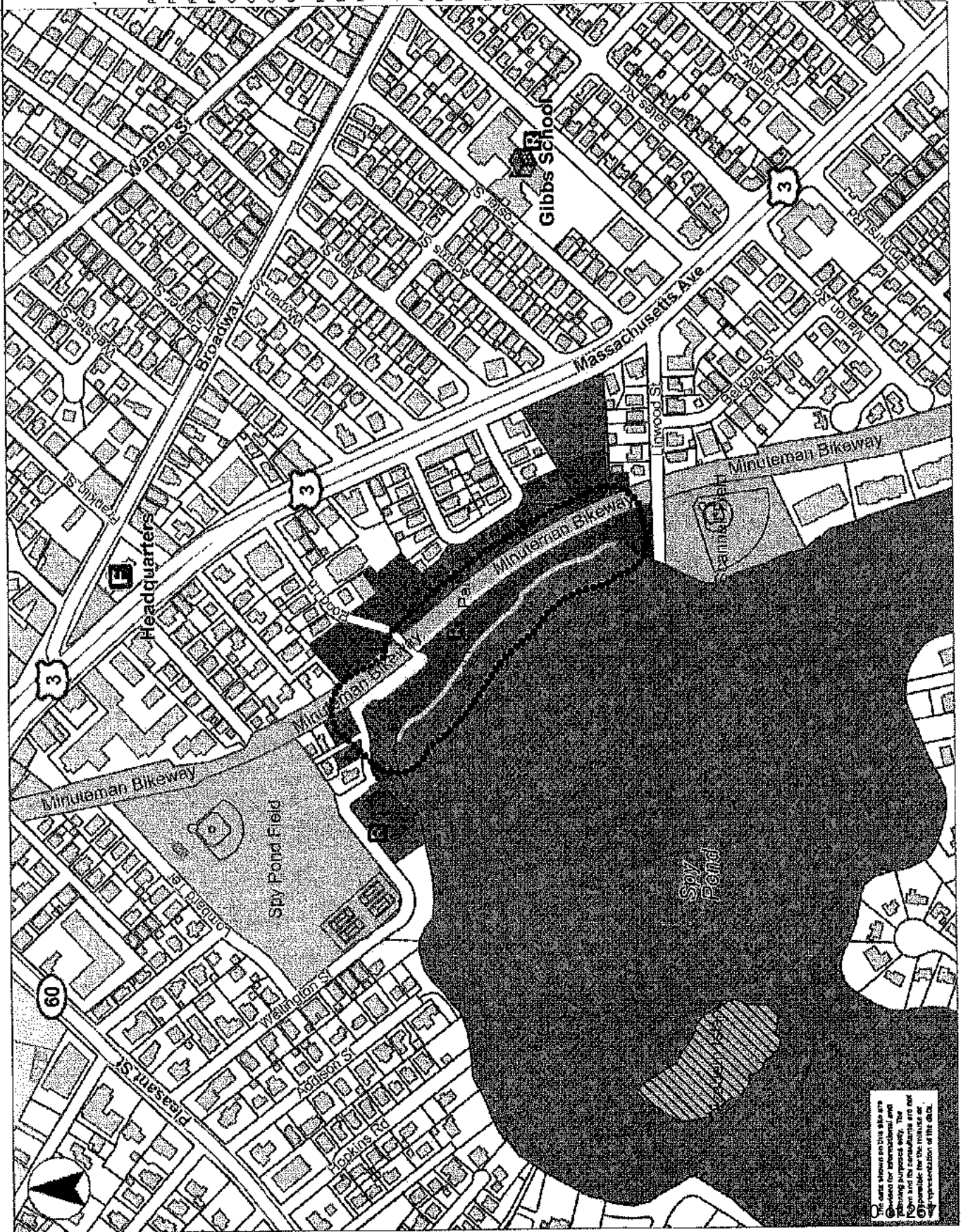
Prop ID: 9.A-2-27.A
Prop Location: 27 LINWOOD ST UNIT 27 Arlington, MA
Owner: SHRESTHA BIJAYA &
Co-Owner: CHAND-SHRESTHA NITU
Mailing Address:
27 LINWOOD ST
ARLINGTON, MA 02474

Prop ID: 9.A-2-29
Prop Location: 29 LINWOOD ST UNIT 29 Arlington, MA
Owner: SULLIVAN BRIAN TRUSTEE
Co-Owner: SULLIVAN LINWOOD TRUST
Mailing Address:

29 LINWOOD ST UNIT 29
ARLINGTON, MA 02474



- Police Station
- Fire Station
- Library
- Public Works
- Police Map - New Traffic
- Recreation - Facilities
- Recreation - Fields Courts
- Recreation - Fields Courts
- Open Space - Conservation
- Open Space - Minuteman
- Open Space - Local
- Open Space
- Open Space - State or Private
- Open Space - Town Owned
- Parcels
- Streets
- Highways
- US Highway
- 225 Numbered Routes
- Town Boundary
- Adjoining Towns
- Roads - Overlay (for Base)
- Roads - For Small Scale (1:60,000)
- Roads - For Large Scale (1:25,000)
- Roads - Local Road
- Roads - For Large Scale (1:25,000)
- Cemetery - Roads
- Railroad
- Road 12
- Road 13
- Road 14
- Water Line
- Water Body



Abutters List[print this list](#)

Date: July 17, 2018

Subject Property Address: 0-LOT POND LN Arlington, MA

Subject Property ID: 9-3-1

Search Distance: 100 Feet

BOARD OF ASSESSORS
TOWN HALL
ARLINGTON, MA 02476-----
Prop ID: 10-3-8

Prop Location: 21 POND LN Arlington, MA

Owner: TOWN OF ARLINGTON

Co-Owner:

Mailing Address:

730 MASS AVE
ARLINGTON, MA 02476-----
Prop ID: 10-5-3

Prop Location: 3 POND TERR Arlington, MA

Owner: CHASE LINDA/ETAL

Co-Owner: DEMPSEY ROGER

Mailing Address:

3 POND TERRACE
ARLINGTON, MA 02474-----
Prop ID: 10-5-4

Prop Location: 1 POND TERR Arlington, MA

Owner: REYNOLDS STEPHEN/ETAL

Co-Owner: WANAMAKER LISA M

Mailing Address:

1 POND TERR
ARLINGTON, MA 02474-----
Prop ID: 10-5-6

Prop Location: 49 POND LN Arlington, MA

Owner: PHELPS CHRISTOPHER B & HEATHER

Co-Owner:

Mailing Address:

49 POND LANE
ARLINGTON, MA 02474-----
Prop ID: 10-5-9

Prop Location: 56 POND LN Arlington, MA

Owner: ARLINGTON ELKS BLDG CORP

Co-Owner:

Mailing Address:

56 POND LANE

ARLINGTON, MA 02474

Prop ID: 10.A-5-1

Prop Location: 46-48 POND LN UNIT 1 Arlington, MA

Owner: MORRISON LAI-KUEN & DONALD M

Co-Owner:

Mailing Address:

46 POND LN UNIT 1

ARLINGTON, MA 02474

Prop ID: 10.A-5-2

Prop Location: 46-48 POND LN UNIT 2 Arlington, MA

Owner: RUSSELL KAREN J

Co-Owner:

Mailing Address:

46 POND LANE UNIT 2

ARLINGTON, MA 02474

Prop ID: 121-7-1

Prop Location: 60 POND LN Arlington, MA

Owner: ARLINGTON BOYS CLUB INC

Co-Owner:

Mailing Address:

60 POND LANE

ARLINGTON, MA 02474

Prop ID: 9-2-11

Prop Location: 21 WYMAN TERR Arlington, MA

Owner: SPY POND LLC

Co-Owner:

Mailing Address:

4501 SOUTH OCEAN BLVD #D8

PALM BEACH, FL 33480

Prop ID: 9-2-12

Prop Location: 25-27 WYMAN TERR Arlington, MA

Owner: KORMANOS ANASTASIA H

Co-Owner: TRUSTEES/A. KORMANOS TRUST

Mailing Address:

49 CHUCKIES WAY
TEWKSBURY, MA 01876

Prop ID: 9-2-13
Prop Location: 29 WYMAN TERR Arlington, MA
Owner: CRONIN JOHN STEVEN--ETAL
Co-Owner: CRONIN MARGARET E
Mailing Address:
29 WYMAN TERR
ARLINGTON, MA 02474

Prop ID: 9-2-14
Prop Location: 33 WYMAN TERR Arlington, MA
Owner: CRONIN ELSIE C
Co-Owner:
Mailing Address:
33 WYMAN TERR
ARLINGTON, MA 02474

Prop ID: 9-2-15
Prop Location: 37 WYMAN TERR Arlington, MA
Owner: MAC DONALD JOSEPH B--ETAL
Co-Owner: FULLER KATHERINE MARIE
Mailing Address:
37 WYMAN TERR
ARLINGTON, MA 02474

Prop ID: 9-2-16
Prop Location: 41 WYMAN TERR Arlington, MA
Owner: FELTIN GEORGE M
Co-Owner:
Mailing Address:
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ARLINGTON, MA 02474

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Co-Owner: C/O WALGREEN CO. #01864
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PO BOX 1159
REAL ESTATE TAX DEPT
DEERFIELD, IL 60015

Prop ID: 9-2-2.A
Prop Location: 0-LOT POND LN Arlington, MA
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Co-Owner:
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ARLINGTON, MA 02476

Prop ID: 9-2-30
Prop Location: 31 LINWOOD ST Arlington, MA
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Co-Owner: MILLER MICHAEL A
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31 LINWOOD ST
ARLINGTON, MA 02474

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Prop Location: 0-LOT POND LN Arlington, MA
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Co-Owner:
Mailing Address:
730 MASS AVE
ARLINGTON, MA 02476

Prop ID: 9.A-2-17
Prop Location: 47 WYMAN TERR UNIT 1 Arlington, MA
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Co-Owner: JOHNSON LINDA ANN/TR
Mailing Address:
47 WYMAN TERRACE #1
ARLINGTON, MA 02474

Prop ID: 9.A-2-18
Prop Location: 47 WYMAN TERR UNIT 2 Arlington, MA
Owner: SALZER NANCY L
Co-Owner:
Mailing Address:
47 WYMAN TERRACE #2
ARLINGTON, MA 02474

Abutters List[print this list](#)

Date: July 17, 2018

Subject Property Address: 0-LOT POND LN Arlington, MA
Subject Property ID: 9-4-1

Search Distance: 100 Feet

BOARD OF ASSESSORS
TOWN HALL
ARLINGTON, MA 02476

Prop ID: 20.A-4-101

Prop Location: 34 HAMILTON RD UNIT 101 Arlington, MA

Owner: FRENGULIAN TAKOUHY/LIFE ESTATE

Co-Owner:

Mailing Address:

34 HAMILTON RD #101
ARLINGTON, MA 02474

Prop ID: 20.A-4-102

Prop Location: 34 HAMILTON RD UNIT 102 Arlington, MA

Owner: BETTS ALLISON

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #102
ARLINGTON, MA 02474

Prop ID: 20.A-4-103

Prop Location: 34 HAMILTON RD UNIT 103 Arlington, MA

Owner: CONROY KRISTINA M

Co-Owner:

Mailing Address:

34 HAMILTON ROAD UNIT 103
ARLINGTON, MA 02474

Prop ID: 20.A-4-104

Prop Location: 34 HAMILTON RD UNIT 104 Arlington, MA

Owner: CHIVUKULA RAMAKRISHNA

Co-Owner: MALLAPRAGADA SOUJANYA G

Mailing Address:

21 BISHOP RD
SHARON, MA 02067

Prop ID: 20.A-4-105

Prop Location: 34 HAMILTON RD UNIT 105 Arlington, MA

Owner: BRAIDA LOUIS D
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #105
ARLINGTON, MA 02474

Prop ID: 20.A-4-106
Prop Location: 34 HAMILTON RD UNIT 106 Arlington, MA
Owner: PALMER WENDY &
Co-Owner: PALMER ALEXANDER W
Mailing Address:
PO BOX 3341
OAK BLUFFS, MA 02557

Prop ID: 20.A-4-107
Prop Location: 34 HAMILTON RD UNIT 107 Arlington, MA
Owner: BRAIDA LOUIS D
Co-Owner:
Mailing Address:
34 HAMILTON ROAD
UNIT 105
ARLINGTON, MA 02474

Prop ID: 20.A-4-108
Prop Location: 34 HAMILTON RD UNIT 108 Arlington, MA
Owner: HUANG ADRIAN
Co-Owner: ALEXANDER ROBERT BRUCE
Mailing Address:
53 PAUL REVERE RD
LEXINGTON, MA 02421

Prop ID: 20.A-4-109
Prop Location: 34 HAMILTON RD UNIT 109 Arlington, MA
Owner: BETTENCOURT MARIO & PAULA
Co-Owner:
Mailing Address:
43 AMSDEN STREET
ARLINGTON, MA 02474

Prop ID: 20.A-4-110
Prop Location: 34 HAMILTON RD UNIT 110 Arlington, MA
Owner: JOHNSON DEREK S
Co-Owner:
Mailing Address:

2393 LAKE SHORE ROAD #36
GILFORD, NH 03249

Prop ID: 20.A-4-201
Prop Location: 34 HAMILTON RD UNIT 201 Arlington, MA
Owner: FENNER MARGARET L
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #201
ARLINGTON, MA 02474

Prop ID: 20.A-4-202
Prop Location: 34 HAMILTON RD UNIT 202 Arlington, MA
Owner: SULLIVAN BRENDAN
Co-Owner:
Mailing Address:
319 LAKE STREET
ARLINGTON, MA 02476

Prop ID: 20.A-4-203
Prop Location: 34 HAMILTON RD UNIT 203 Arlington, MA
Owner: KANDILIAN FAGHARCH
Co-Owner:
Mailing Address:
27 ESTABROOK RD
LEXINGTON, MA 02421

Prop ID: 20.A-4-204
Prop Location: 34 HAMILTON RD UNIT 204 Arlington, MA
Owner: MUJAGIC NADIJA
Co-Owner:
Mailing Address:
935 BROADWAY UNIT 1
SOMERVILLE, MA 02144

Prop ID: 20.A-4-205
Prop Location: 34 HAMILTON RD UNIT 205 Arlington, MA
Owner: COLEMAN DIANA T
Co-Owner:
Mailing Address:
1 RICHDALE AVE UNIT 12
CAMBRIDGE, MA 02140

Prop ID: 20.A-4-206
Prop Location: 34 HAMILTON RD UNIT 206 Arlington, MA
Owner: YANG XIAOQING
Co-Owner: WU YECHENG
Mailing Address:
5 APPLETREE LN
LEXINGTON, MA 02420

Prop ID: 20.A-4-207
Prop Location: 34 HAMILTON RD UNIT 207 Arlington, MA
Owner: COLEMAN DIANA T
Co-Owner:
Mailing Address:
1 RICHDAL AVE UNIT 12
CAMBRIDGE, MA 02140

Prop ID: 20.A-4-208
Prop Location: 34 HAMILTON RD UNIT 208 Arlington, MA
Owner: WALSH ADELE C /TRUSTEE
Co-Owner: WALSH REALTY TRUST
Mailing Address:
34 HAMILTON ROAD #208
ARLINGTON, MA 02474

Prop ID: 20.A-4-209
Prop Location: 34 HAMILTON RD UNIT 209 Arlington, MA
Owner: REARDON WILLIAM F JR/TRUSTEE
Co-Owner: 34-209 REALTY TRUST
Mailing Address:
34 HAMILTON RD UNIT 209
ARLINGTON, MA 02474

Prop ID: 20.A-4-210
Prop Location: 34 HAMILTON RD UNIT 210 Arlington, MA
Owner: THOMPSON KEVIN F
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #210
ARLINGTON, MA 02474

Prop ID: 20.A-4-301
Prop Location: 34 HAMILTON RD UNIT 301 Arlington, MA

Owner: JOLKOVSKI ROBERT M

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #301
ARLINGTON, MA 02474

Prop ID: 20.A-4-302

Prop Location: 34 HAMILTON RD UNIT 302 Arlington, MA

Owner: YANUSHPOLSKY MIRAM FEIGA &

Co-Owner: JOSEPH & SHAUMYAN GALINA/TR

Mailing Address:

34 HAMILTON ROAD #302
ARLINGTON, MA 02474

Prop ID: 20.A-4-303

Prop Location: 34 HAMILTON RD UNIT 303 Arlington, MA

Owner: NAGAYAMA KEIKO

Co-Owner:

Mailing Address:

34 HAMILTON RD #303
ARLINGTON, MA 02474

Prop ID: 20.A-4-304

Prop Location: 34 HAMILTON RD UNIT 304 Arlington, MA

Owner: POURALI SHAHRAM

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #304
ARLINGTON, MA 02474

Prop ID: 20.A-4-305

Prop Location: 34 HAMILTON RD UNIT 305 Arlington, MA

Owner: LANNOM ANITA C/TRUSTEE

Co-Owner: ACL REALTY TRUST

Mailing Address:

34 HAMILTON ROAD #305
ARLINGTON, MA 02474

Prop ID: 20.A-4-306

Prop Location: 34 HAMILTON RD UNIT 306 Arlington, MA

Owner: BRETON JOSEPH F & JOAN M

Co-Owner:

Mailing Address:

24 MIDLAND DRIVE
WALTHAM, MA 02451

Prop ID: 20.A-4-307
Prop Location: 34 HAMILTON RD UNIT 307 Arlington, MA
Owner: MOLINA LIZA
Co-Owner: PHILLIPS THOMAS
Mailing Address:
34 HAMILTON RD # 307
ARLINGTON, MA 02474

Prop ID: 20.A-4-308
Prop Location: 34 HAMILTON RD UNIT 308 Arlington, MA
Owner: BYRON PAMELA D
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #308
ARLINGTON, MA 02474

Prop ID: 20.A-4-309
Prop Location: 34 HAMILTON RD UNIT 309 Arlington, MA
Owner: HARRINGTON MARY
Co-Owner: LIFE ESTATE
Mailing Address:
28 CORNELL ST
C/O EILEEN KIRK
ROSLINDALE, MA 02131

Prop ID: 20.A-4-310
Prop Location: 34 HAMILTON RD UNIT 310 Arlington, MA
Owner: THE 2005 C & W LLC
Co-Owner:
Mailing Address:
1 CHURCHILL PL
ARLINGTON, MA 02476

Prop ID: 20.A-4-401
Prop Location: 34 HAMILTON RD UNIT 401 Arlington, MA
Owner: BLUMENTHAL ELIZABETH A
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #401
ARLINGTON, MA 02474

Prop ID: 20.A-4-402
Prop Location: 34 HAMILTON RD UNIT 402 Arlington, MA
Owner: LOPRESTE FRANK A JR
Co-Owner:
Mailing Address:
32 MCGINNESS WAY
BILLERICA, MA 01821

Prop ID: 20.A-4-403
Prop Location: 34 HAMILTON RD UNIT 403 Arlington, MA
Owner: FENNER MARGARET
Co-Owner:
Mailing Address:
34 HAMILTON RD # 201
ARLINGTON, MA 022474

Prop ID: 20.A-4-404
Prop Location: 34 HAMILTON RD UNIT 404 Arlington, MA
Owner: CORNELL JOANNE
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #404
ARLINGTON, MA 02474

Prop ID: 20.A-4-405
Prop Location: 34 HAMILTON RD UNIT 405 Arlington, MA
Owner: MIGHILL CHARLES T--ETAL
Co-Owner: GILSON CHARLOTTE
Mailing Address:
34 HAMILTON ROAD #405
ARLINGTON, MA 02474

Prop ID: 20.A-4-406
Prop Location: 34 HAMILTON RD UNIT 406 Arlington, MA
Owner: DADUSE SARAH
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #406
ARLINGTON, MA 02474

Prop ID: 20.A-4-407
Prop Location: 34 HAMILTON RD UNIT 407 Arlington, MA
Owner: LOW UTA MARION
Co-Owner:
Mailing Address:
34 HAMILTON ROAD #407
ARLINGTON, MA 02474

Prop ID: 20.A-4-408
Prop Location: 34 HAMILTON RD UNIT 408 Arlington, MA
Owner: JAMES B NUTTER & COMPANY
Co-Owner:
Mailing Address:
4153 BROADWAY
PO BOX 10346
KANSAS CITY, MO 64171

Prop ID: 20.A-4-409
Prop Location: 34 HAMILTON RD UNIT 409 Arlington, MA
Owner: KLEPPNER PAUL S
Co-Owner: MUI LINDA P
Mailing Address:
213 FOLLEN ROAD
LEXINGTON, MA 02421

Prop ID: 20.A-4-410
Prop Location: 34 HAMILTON RD UNIT 410 Arlington, MA
Owner: ROBERTS CHRISTINA
Co-Owner:
Mailing Address:
34 HAMILTON ROAD UNIT 410
ARLINGTON, MA 02476

Prop ID: 20.A-4-501
Prop Location: 34 HAMILTON RD UNIT 501 Arlington, MA
Owner: ZHAO QIN
Co-Owner: YU BEI
Mailing Address:
34 HAMILTON ROAD #501
ARLINGTON, MA 02474

Prop ID: 20.A-4-502
Prop Location: 34 HAMILTON RD UNIT 502 Arlington, MA
Owner: HARE BRIAN J

Co-Owner: NARDONE JULIE M

Mailing Address:

34 HAMILTON RD #502
ARLINGTON, MA 02474

Prop ID: 20.A-4-503

Prop Location: 34 HAMILTON RD UNIT 503 Arlington, MA

Owner: SHUTE PRISCILLA E

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #503
ARLINGTON, MA 02474

Prop ID: 20.A-4-504

Prop Location: 34 HAMILTON RD UNIT 504 Arlington, MA

Owner: FALLER LINA

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #504
ARLINGTON, MA 02474

Prop ID: 20.A-4-505

Prop Location: 34 HAMILTON RD UNIT 505 Arlington, MA

Owner: FACHER JEROME P

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #505
ARLINGTON, MA 02474

Prop ID: 20.A-4-506

Prop Location: 34 HAMILTON RD UNIT 506 Arlington, MA

Owner: EWINS GEORGE D JR ETAL /TRS

Co-Owner: ELIZABETH I EWINS SUPPLEMENTAL

Mailing Address:

2979 GREENBUSH RD
CHARLOTTE, VT 05445

Prop ID: 20.A-4-507

Prop Location: 34 HAMILTON RD UNIT 507 Arlington, MA

Owner: ANDERSON ERIC HALL

Co-Owner:

Mailing Address:

34 HAMILTON ROAD #507
ARLINGTON, MA 02474

Prop ID: 20.A-4-508
Prop Location: 34 HAMILTON RD UNIT 508 Arlington, MA
Owner: RAPARTHI LALITHA
Co-Owner: RAPARTI SWAYAMBHU
Mailing Address:
34 HAMILTON RD UNIT 508
ARLINGTON, MA 02474

Prop ID: 20.A-4-509
Prop Location: 34 HAMILTON RD UNIT 509 Arlington, MA
Owner: FESKO COLLEENE TRUSTEE
Co-Owner: 34 HAMILTON ROAD TRUST
Mailing Address:
34 HAMILTON ROAD #509
ARLINGTON, MA 02474

Prop ID: 20.A-4-510
Prop Location: 34 HAMILTON RD UNIT 510 Arlington, MA
Owner: JUROW KATHLEEN A
Co-Owner:
Mailing Address:
12 CARVER STREET
SOMERVILLE, MA 02143

Prop ID: 8-2-1
Prop Location: 26-28 LINWOOD ST Arlington, MA
Owner: CONANT-HENSON DEBORAH
Co-Owner:
Mailing Address:
P.O. BOX 1039
ARLINGTON, MA 02474

Prop ID: 8-2-3
Prop Location: 28 BELKNAP ST Arlington, MA
Owner: SCHIZAS KOSTAS J & PATTI
Co-Owner: TRS/KOSTTAS & PATTI SCHIZAS TR
Mailing Address:
30 BELKNAP ST
ARLINGTON, MA 02474

Prop ID: 8-2-37
Prop Location: 11 MARION CIR Arlington, MA
Owner: MASSE DAVID W & PATRICIA A
Co-Owner:
Mailing Address:
11 MARION CIRCLE
ARLINGTON, MA 02474

Prop ID: 8-2-4
Prop Location: 22-24 BELKNAP ST Arlington, MA
Owner: PERRY ALLYNE T
Co-Owner: PERRY MICHAEL D
Mailing Address:
22 BELKNAP ST
ARLINGTON, MA 02474

Prop ID: 8-2-5
Prop Location: 18 BELKNAP ST Arlington, MA
Owner: CALIENDO ANTHONY R--ETAL
Co-Owner: CALIENDO MARY JANE TRS
Mailing Address:
1520 MASS AVE
ARLINGTON, MA 02476

Prop ID: 9-3-3
Prop Location: 0-LOT POND LN Arlington, MA
Owner: TOWN OF ARLINGTON PARK
Co-Owner:
Mailing Address:
730 MASS AVE
ARLINGTON, MA 02476

Prop ID: 9.A-2-27.A
Prop Location: 27 LINWOOD ST UNIT 27 Arlington, MA
Owner: SHRESTHA BIJAYA &
Co-Owner: CHAND-SHRESTHA NITU
Mailing Address:
27 LINWOOD ST
ARLINGTON, MA 02474

Prop ID: 9.A-2-29
Prop Location: 29 LINWOOD ST UNIT 29 Arlington, MA
Owner: SULLIVAN BRIAN TRUSTEE

Co-Owner: SULLIVAN LINWOOD TRUST

Mailing Address:

29 LINWOOD ST UNIT 29

ARLINGTON, MA 02474

Abutters List[print this list](#)

Date: July 17, 2018

Subject Property Address: 0-LOT POND LN Arlington, MA
Subject Property ID: 121-6-2

Search Distance: 100 Feet

Prop ID: 10-5-11.A
Prop Location: 0-LOT LOMBARD TERR Arlington, MA
Owner: TOWN OF ARLINGTON PARK
Co-Owner:
Mailing Address:

730 MASS AVE
ARLINGTON, MA 02476

BOARD OF ASSESSORS
TOWN HALL
ARLINGTON, MA 02476

Prop ID: 121-4-11.A
Prop Location: 0-LOT ADDISON ST Arlington, MA
Owner: TOWN OF ARLINGTON
Co-Owner:
Mailing Address:

730 MASS AVE
ARLINGTON, MA 02476

Prop ID: 121-4-12
Prop Location: 36 ADDISON ST Arlington, MA
Owner: CHASAN GWEN B
Co-Owner:
Mailing Address:
36 ADDISON STREET
ARLINGTON, MA 02476

Prop ID: 121-4-13
Prop Location: 34 ADDISON ST Arlington, MA
Owner: SMITH ANA R/TRUSTEE
Co-Owner: ANA SMITH TRUST
Mailing Address:
34 ADDISON ST
ARLINGTON, MA 02476

Prop ID: 121-4-9.A
Prop Location: 39 WELLINGTON ST UNIT A Arlington, MA

Owner: HOWARD ROBERT L & PETER M/TRS
Co-Owner: RPK NOMINEE TRUST
Mailing Address:
39 WELLINGTON ST #39
ARLINGTON, MA 02476

Prop ID: 121-4-9.B
Prop Location: 39 WELLINGTON ST UNIT B Arlington, MA
Owner: GUTHRIE PATRICK
Co-Owner: TABERNER AIMEE
Mailing Address:
41 WELLINGTON ST
ARLINGTON, MA 02476

Prop ID: 121-7-1
Prop Location: 60 POND LN Arlington, MA
Owner: ARLINGTON BOYS CLUB INC
Co-Owner:
Mailing Address:
60 POND LANE
ARLINGTON, MA 02474

Prop ID: 121.A-4-37.A
Prop Location: 37-A WELLINGTON ST UNIT 1 Arlington, MA
Owner: STORZ KAREN A &
Co-Owner: BARTHELMY WILLIAM F
Mailing Address:
37A WELLINGTON ST UNIT 1
ARLINGTON, MA 02476

Prop ID: 121.A-4-37.B
Prop Location: 37-B WELLINGTON ST UNIT 2 Arlington, MA
Owner: HOER JUDITH F & TAI NAOYUKI
Co-Owner:
Mailing Address:
37B WELLINGTON ST UNIT 2
ARLINGTON, MA 02476



Police Station
Fire Station
School
Library
Public Works
Engineering - Traffic Signs
Crosswalks - Location (black)

Parcels

Buildings

Recreation - Facilities

Recreation - Fields Courts

Recreation - Fields Courts

Open Space - Conservation

Open Space - Minuteman Trail

Open Space - Labels

Open Space

Town, State, or Private

Other Town Owned

MA Highways

US Highways

US Highways

Numbered Routes

Abutting Towns

Town Boundary

Roads - OneWay (for Base)

Roads - For Small Scale (ft)

Major Road

Local Road

Roads - For Large Scale (ft)

Parcel Map - Misc (traffic is

Cemetery - Roads

Road1

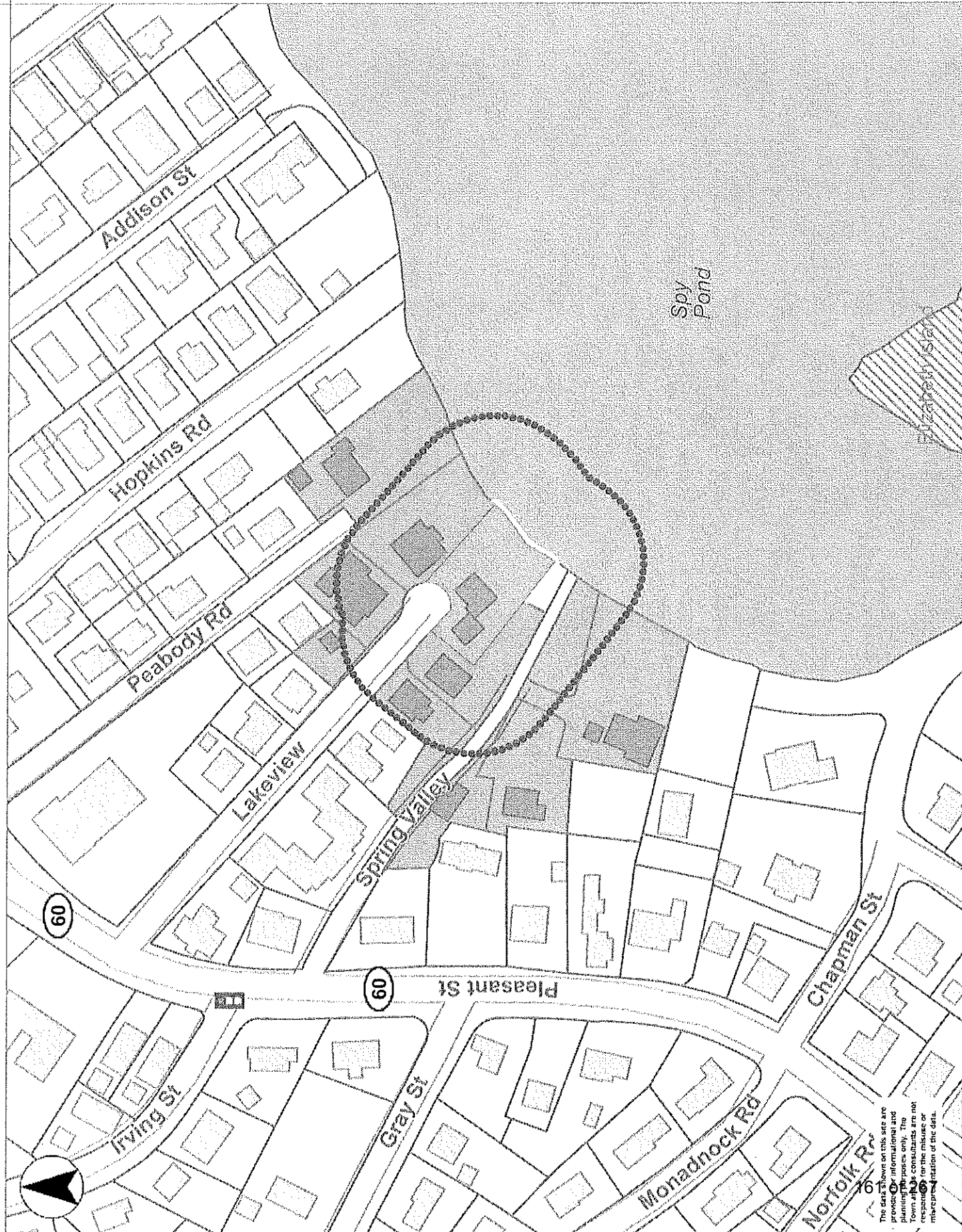
Road2

Road3

Road4

Water Line

Water Body



The data shown on this site are for informational purposes only and are not intended for use in any legal proceeding. The Town of Andover is not responsible for the misuse or misrepresentation of the data.

0 200 400 ft

Printed on 07/18/2018 at 08:44 AM

Abutters List[print this list](#)

Date: July 18, 2018

Subject Property Address: 19 LAKEVIEW Arlington, MA
Subject Property ID: 122-5-16.B

Search Distance: 100 Feet

Prop ID: 121-1-7
Prop Location: 22 LAKEVIEW Arlington, MA
Owner: 22 LAKEVIEW LLC
Co-Owner:
Mailing Address:

31 PHILEMON STREET
ARLINGTON, MA 02474

**BOARD OF ASSESSORS
TOWN HALL
ARLINGTON, MA 02476**

Prop ID: 121-1-8
Prop Location: 24-26 LAKEVIEW Arlington, MA
Owner: BOWES ROBERT E
Co-Owner:
Mailing Address:
26 LAKEVIEW
ARLINGTON, MA 02476

Prop ID: 121-1-9
Prop Location: 0-LOT LAKEVIEW Arlington, MA
Owner: WADSWORTH MARY DEIRDRE
Co-Owner:
Mailing Address:
25 PEABODY RD
ARLINGTON, MA 02476

Prop ID: 121-2-10
Prop Location: 36 PEABODY RD Arlington, MA
Owner: JESSEN IAN
Co-Owner: HATCH ELIZA
Mailing Address:
36 PEABODY RD
ARLINGTON, MA 02476

Prop ID: 122-4-10
Prop Location: 0-LOT SPRING VALLEY Arlington, MA

Owner: JARDINE ALICE A /TRUSTEE
Co-Owner: ALICE A JARDINE TRUST
Mailing Address:
21 SPRING VALLEY
ARLINGTON, MA 02476

Prop ID: 122-4-13.A
Prop Location: 25 SPRING VALLEY Arlington, MA
Owner: CARTER E EUGENE--ETAL
Co-Owner: RITA RODRIGUEZ
Mailing Address:
3075 ORDWAY ST N W
WASHINGTON, DC 20008

Prop ID: 122-4-8.B
Prop Location: 17 SPRING VALLEY Arlington, MA
Owner: STIFFLER DANA E
Co-Owner:
Mailing Address:
17 SPRING VALLEY
ARLINGTON, MA 02476

Prop ID: 122-4-9
Prop Location: 21 SPRING VALLEY Arlington, MA
Owner: JARDINE ALICE A /TRUSTEE
Co-Owner: ALICE A JARDINE TRUST
Mailing Address:
21 SPRING VALLEY
ARLINGTON, MA 02476

Prop ID: 122-5-15
Prop Location: 17 LAKEVIEW Arlington, MA
Owner: JENNINGS MATTHEW S & KATHRYN M
Co-Owner:
Mailing Address:
17 LAKEVIEW AVE
ARLINGTON, MA 02476

Prop ID: 122-5-17
Prop Location: 17-1/2 LAKEVIEW Arlington, MA
Owner: BOUDREAU MARK E &
Co-Owner: ZEILER KATHRYN M
Mailing Address:

17 1/2 LAKEVIEW
ARLINGTON, MA 02476

SPY POND EDGE PROTECTION AND EROSION CONTROL PROJECT
LEGAL NOTICE CHARGE AUTHORIZATION

LEGAL NOTICE CHARGE AUTHORIZATION

DATE: 7/18/18

TO: legals@wickedlocal.com

I hereby authorize Community Newspapers to bill me directly for the legal notice to be published in the Arlington Advocate newspaper on _____ for a public hearing with the Arlington Conservation Commission to review a project at the following location:

Thank you.

Signed:



Duke Bitsko, PLA
Director, Interdisciplinary Design
Hatch Associates Consultants, Inc.

Send bill to:

Hatch
27 Congress Street, Suite 508
Salem, MA 01970
Phone: 978-224-3123

NOTICE OF INTENT APPLICATION REPORT

SECTION 1: INTRODUCTION

1.1 PROJECT DESCRIPTION

On behalf of the Arlington Park and Recreation Commission, Hatch Associates Consultants, Inc. (Hatch) is filing this Notice of Intent Application (NOI) with the Arlington Conservation Commission for a shoreline ecological restoration project at Town-owned properties along Spy Pond (the Site). The four locations include Spy Pond Park, Scannell Field, the terminus of Spring Valley Street, and the area west of the Boys and Girls Club. The total proposed project limits are approximately 1.12 acres with approximately 0.69 acres of earth disturbance. The applicant proposes to restore degraded and heavily eroded areas of Inland Bank by using bioengineered bank stabilization treatments, enhancement plantings, select invasive species management, green infrastructure stormwater management, and installing two timber overlook structures on helical pier footings to focus recreational use of the Site as part of the restorative effort and minimize disruption to restored habitat. Select invasive species control and planting of native wetland and upland plant species will improve habitat and increase plant diversity.

A separate trail resurfacing project undertaken by the Arlington Park and Recreation Commission will take place at a similar time as the shoreline restoration project. While it is not included as part of this NOI, this trail project will be filed as a Request for Determination of Applicability (RDA) and includes replacing the existing impervious stabilized aggregate surface with flexible porous pavement at Spy Pond Park, including the paths to the two timber overlooks proposed herein.

A seasonal floating dock with gangway and flexible porous pavement walkway in Spy Pond Park is in the design phase. It has been permitted by the Arlington Board of Selectmen on July 16, 2018 under Section 10A. The future dock will be located between the existing boat ramp and the North Beach. It will be situated to avoid any impact to the existing Engelmann's Umbrella-sedge habitat. The outline of the location can be found on L-1 in Appendix F. The dock with gangway and associated walkway are not included as part of this NOI.

The project site contains resource areas regulated under the *Massachusetts Wetlands Protection Act (M.G.L. c. 131, s. 40, the Act) and its implementing Regulations (310 CMR 10.00, the Act Regulations), and the Town of Arlington Wetland Protection Bylaw (Article 8, the Bylaw) and its implementing Regulations (the Bylaw Regulations)*. They include Inland Bank, Bordering Vegetated Wetland (BVW), Land Under Water Bodies and Waterways (LUW, Spy Pond), and Bordering Land Subject to Flooding (BLSF). All the proposed activities occur within Bank to Spy Pond and the 100-foot Buffer Zone, with a small portion occurring within BVW, LUW, and BLSF.

As part of this filing, the Applicant proposes to implement erosion controls to protect adjacent resource areas. The existing conditions and proposed activities are depicted on the *Existing Conditions & Resource Area Plan, Site Preparation Plan, Site Plan, Plan Enlargements, and Site Details*, prepared by Hatch (Appendix F, attached).

NOTICE OF INTENT APPLICATION REPORT

SECTION 2: GENERAL SITE DESCRIPTION

Spy Pond is a 103-acre kettle hole pond classified as a Great Pond located north of Route 2 in Arlington, MA. The four project locations along the pond are at Spy Pond Park, Scannell Field, Spring Valley, and the area west of the Boys and Girls Club. The area west of Boys and Girls Club is at the most northern end of the pond where Wellington Street and the Pond Lane Extension meet. Spy Pond Park is to the northeast bounded by Pond Lane to the north, the Minuteman Commuter Bikeway to the east, Linwood Street to the south and the pond to the west. Scannell Field is to the south of Linwood Street adjacent to Hamilton Road and the Spy Pond Condominium Complex. Spring Valley Street is to the northwest side of the pond. Spring Valley is a steep, narrow two-way road off Pleasant Street that dead-ends about 10 feet from Spy Pond.

The pond has seen an increase in use over the past decade with the renovation work at Spy Pond Park and is a major focal point for the community. There are, however areas where uncontrolled use and stormwater runoff have created deteriorating conditions that impact water quality and long-term sustainability. Poor water quality and erosion along the Bank and slopes are an ongoing concern.

2.1 TOPOGRAPHY

The Bank along Scannell Field, the area west of Boy and Girls Club, and Spring Valley Street is unstable with a loss of stabilizing vegetation, uncontrolled human use, and steep slopes. Spring Valley and Scannell Field also have uncontrolled stormwater runoff that sheets flow over the Bank into the pond contributing to the erosion. Spy Pond Park's Bank is more stable, but there are areas of erosion with scattered areas without vegetation and compacted soils due to controlled human use.

The area west of Boys and Girls Club has a grassed area along the street sidewalk and parking spaces that primarily serve the adjacent Boys and Girls Club. This grass area is above a steep 2:1 slope down to Spy Pond. There is no formal access to the pond and so casual pathways down and across the slope have evolved in several locations over time. These informal access areas are eroding and contributing sediment to the pond.

Spy Pond Park's designated stabilized aggregate pathways provide access to facilities including two small beaches, picnic tables and benches, access points to the water, a children's play area, and a boat ramp. For the most part pedestrians use the defined pathways; however, there are informal pathways that eliminate stabilizing vegetation leading to erosion and, consequently, sedimentation in the pond. When the pond levels are especially low there is also foot traffic within Land Under Waterbodies (LUW). Along the Bank, there is a slight escarpment with no stabilizing tree roots and wave action has eliminated the stabilizing vegetation. There are also a couple of areas where the exposed tree roots along the Bank are being undercut by wave action. There are nine separate planting beds along the slope to the Bank that the Friends of Spy Pond volunteers maintain. The upland areas are ordinary lawn grass mowed regularly by the Recreation Department.

The Bank along Scannell Field varies from 2:1 to nearly vertical in some areas. The area between the Bank and the grass area at the top of the slope by the ball field varies from 3:1 to 2:1. There are no formal pathways that provide access to the water. A chain-link fence separates the ball field from the slope to the water. Numerous informal footpaths have eliminated vegetation exposing the compacted soil to erosion. Old growth trees line the shoreline with extensive root structures providing partial stabilization to the slope and the vertical Bank. In many cases, however, the roots are being

undermined by wave action that has eroded soil beneath the roots. Considerable erosion is occurring along vertical Banks that are not contained by roots.

The Bank at the end of Spring Valley Street is approximately 1:1 due to a rainfall event that produced high energy sheet flow down the paved road undermining and overturning a 30-inch diameter poplar tree that served to stabilize the Bank. The upturned, root ball, approximately eight feet in diameter has created a large, eroding crater in the slope at the water's edge. The fallen tree extends out into the pond for approximately 80 feet, supported by broken limbs.

Refer to the Site Characterization Report in Appendix B for further discussion on the existing conditions and for site photographs.

2.2 DRAINAGE AND WATER ELEVATION

The total watershed area draining to Spy Pond is approximately 964 acres. The entire watershed with one small exception at Menotomy Park drains through 43 separate outfalls into Spy Pond as described in *Spy Pond: A Diagnostic Study 1980-1981* (Division of Water Pollution Control, 1982). High inputs of phosphorous from the stormwater runoff entering the lake have caused the pond to become hypereutrophic.

There are three existing storm drainage outfalls that discharge into the pond in Spy Pond Park. There is one outfall each at the end of Spring Valley Street and at the area west of the Boys and Girls Club. The outfalls at Spy Pond Park have rock aprons in disrepair with missing and shifted rocks exposing filter fabric. The 12-inch outfall near Boys and Girls Club is partially filled with sediment and water. The outfall is ill-defined due to the lack of an endwall and the surrounding vegetation that grown in obscuring it from view.

Stormwater runoff via sheet flow across the ball field at Scannell Field is likely a source of nitrogen and phosphorous contamination in the pond affecting the perennial decline of Spy Pond water quality a contributing to accelerated erosion on the slope.

Uncontrolled stormwater runoff is also a concern at the end of Spring Valley Street. Spring Valley is a steep road that dead-ends about 10 feet from Spy Pond. Runoff from Spring Valley Road is managed by two catch basins that directs that flow through a 24-inch pipe into Spy Pond with no treatment. Downhill from the second catch basin, runoff concentrates in an eroded channel at the base of the slope along the north side of the roadway and flows overland into the pond.

The water elevation at Spy Pond is controlled by an outfall structure on the south end of the pond near Route 2. The outfall structure has three concrete sides and the fourth side is a series of boards. The structure is connected to a 36-inch diameter reinforced concrete discharge pipe. The elevation of the boards or the spillway elevation is approximately 4.2 ft. based on 1929 MDPW datum and 3.4 ft. based on NAVD 88 datum. All subsequent elevations indicated in the report as well as depicted on the plans are in NAVD 88 datum. The ordinary water level and the limit of the Bank is consistent with elevation 3.4 ft. In drought conditions on September 23, 2016, the low water level was observed at 1.6 ft.

2.3 SOILS

Soils map information is available from the Natural Resources Conservation Service Web Soil Survey. Soils at Spring Valley Street are Hinckley loamy sand, 15 to 25 percent slopes, which is classified as Hydrologic Soil Group A. The area west of Boys and Girls Club, Spy Pond Park, and Scannell Field have

Udorthents, loamy. Udorthents are areas from which soil has been excavated and/or deposited due to construction operations. These areas have been disturbed to such an extent that the natural layers of soil are no longer recognizable and are no longer a major factor in determining limitations or capabilities of the land. Other soils information for the site is available from wetland resource investigations conducted for this project. See Appendix A of this report for a discussion of wetland investigations.

2.4 FEMA FLOODPLAIN DESIGNATION

The project area is in Flood Zone X and Zone A based on the *Federal Emergency Management Agency Flood Insurance Map* for the Town of Arlington, Massachusetts (Map Number 25017C0416E and 25017C0417E), effective June 4, 2010. Spy Pond and the area immediately adjacent to it are shown as Flood Zone A. Zone A are areas subject to flooding by the 100-year flood with no base flood elevation determined. Zone X are areas determined to be outside the 0.2% annual chance floodplain. Refer to Figure 2A and 2B in Appendix A and the Plans provided in Appendix F.

2.5 NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM DESIGNATION

According to the Natural Heritage and Endangered Species Program (NHESP) Priority & Estimated Habitats maps (14th Edition Natural Heritage Atlas, August 1, 2017), an area of Priority Habitat of Rare Species exists at Spy Pond (PH 1421) for Engelmann's Umbrella-sedge (*Cyperus engelmannii*). Engelmann's Umbrella-sedge is a Threatened species in Massachusetts. Engelmann's Umbrella-sedge is an annual species found along wet pond shores, which may be muddy, sandy, or pebbly. This species is protected under the *Massachusetts Endangered Species Act* (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00).

During the first week of October 2017, following approval by NHESP of a Botanical Survey Protocol, Dr. Gregg Moore of Zodiac Ecological, LLC, conducted on site observations of the Engelmann's Umbrella-sedge. In Dr. Moore's *Botanical Survey Report* (see Appendix C), he observed a moderate number of individuals of the genus *Cyperus* along sunny, relatively open stretch of sandy and/or muddy shoreline in the Spy Pond Park area. No species of *Cyperus* were observed at Scannell Field, the area west of Boys and Girls Club or at the terminus of Spring Valley Street. Three locations of Engelmann's Umbrella-sedge observation occurred at South Beach; a muddy, shallowly sloped shore that is regularly mowed, just north of the Linwood Street cul-de-sac. The other two observations are in sandy soils, again, under an open canopy in a relatively disturbed portion of shoreline just south of the boat ramp and just north of North Beach.

Hatch team members including Dr. Moore and LEC met on-site with Misty-Anne Marold and Karro Frost of NHESP on November 17, 2017 to review the project area and discuss design approaches for the Bank restoration. It was advised by NHESP staff to take a strategic approach to shoreline stabilization. For areas next to known Engelmann's Umbrella-sedge habitat (in general sunny with a gentler slope), the Hatch team was advised to consider other alternatives to coir fascines/regrading that will not alter habitat. Areas that were steep and shady were not considered to be providing habitat for the Engelmann's Umbrella-sedge. This included some of the steeper shoreline areas within the Park, Scannell Field, the area west of Boys and Girls Club, and Spring Valley Street.

Duke Bitsko of Hatch met with Karro Frost and Jesse Leddick of NHESP on June 8, 2018 to review the project plans and details (Appendix F) and discuss construction staging and schedule. Based on the meeting discussion, Hatch developed an alternative plan and section to protect existing Engelmann's Umbrella-sedge areas. The proposed coir fascines along the locations of the observed Engelmann's Umbrella-sedge south of the boat ramp and north of the North Beach were removed from the design.

Granite boulders are proposed to be placed in the LUW, immediately adjacent to the Bank, to reduce foot traffic, protect the existing seedbank in the lower, shallow zones, and reduce wave action.

Refer to Appendix C for the VPRS NHESP Plant Observation Report and Appendix D for documentation of correspondence with NHESP staff.

NOTICE OF INTENT APPLICATION REPORT

SECTION 3: PROPOSED CONSTRUCTION ACTIVITIES

The primary activities involve bank stabilization with bioengineering techniques, enhancement planting in upland and wetland areas, select invasive species management, and construction of green infrastructure stormwater management and installation of two timber overlook structures on helical pier footings. A limited amount of earthwork and grading is associated with each of these activities.

3.1 BANK STABILIZATION

The bank stabilization at Spy Pond involves the placement of coir fascines around the perimeter of the pond and regrading to achieve maximum slopes of 3:1, which will strengthen approximately 1,500 linear feet (lf) of bank. The design intent is to place the coir fascine at the ordinary water level of 3.4 ft. NAVD88 to accommodate typical water level fluctuations until root development has been established. A stacked coir fascine system is proposed in areas where 3:1 slopes cannot be achieved. All regraded areas will be densely planted. Goose protection fence will be used in all coir fascine planting areas during establishment to minimize damage associated with foraging.

On Spy Pond, bank stabilization with the addition of riprap and geotextile fabric is proposed in isolated areas for the drainage outfall protection at Spy Pond Park and the area west of the Boys and Girls Club totaling approximately 30 lf.

3.2 UPLAND PLANTINGS

Existing upland areas on the banks of Spy Pond will be cleared of invasive herbaceous species. Infill planting of native tree tubelings, 2 ft. high containerized trees, livestock shrubs, containerized shrubs, and herbaceous plugs will occur in these areas and in areas of existing compacted footpaths and gullies to be scarified and stabilized. Additionally, there are several upland areas of proposed regrading and/or green infrastructure improvements where meadow seeding and tall turf seeding will occur.

3.3 PROPOSED CONSTRUCTION ACTIVITIES IN WETLAND RESOURCES AREA

This section describes the project plans depiction of the proposed work and landscape improvements to each of the jurisdictional wetland resource areas. The project is designed to avoid or minimize permanent alterations and temporary construction disturbances of all resource areas to the maximum extent practicable. It also is designed to comply with the regulatory performance standards for each resource area by mitigating all unavoidable, permanent and temporary impacts to each resource area. The relative ecological significance of project impacts was considered within the context of protected ecological functions and services, presumed by the WPA to be significant for each resource area.

As an Ecological Restoration Limited Project in accordance with 310 CMR 10.53(4), the Commission has discretionary authority to approve the proposed alterations “that may result in the temporary or permanent loss of Resource Area and/or the conversion of one Resource Area to another when such loss is necessary to the achievement of the project’s ecological restoration goals.” The type of Ecological Restoration Limited Project is considered “Other Restoration Projects” per 310 CMR 10.53(4)(e)(5) meeting the eligibility criteria set forth in 310 CMR 10.54(4)(a) through(d). The project includes enhancement of Rare Species (Engelmann’s Umbrella-sedge) habitat, planting of vegetation to improve habitat value, fill removal and regrading, and invasive species management.

3.3.1 Bank

A total of 1,530 lf of Bank will be restored as part of the project. An estimated 12 lf of this total Bank along Spy Pond will be disturbed during installation of the overlook crossings from land onto the waters of Spy Pond. As described above, these are intended to focus recreational use of the Site as part of the restorative effort and minimize disruption to restored habitat. The remaining Bank will be restored with coir fascine and herbaceous plantings. At the proposed north overlook location, there is an existing stepping stone overlook that will be removed. The Bank underneath the overlook will be restored with coir fascine. At the south overlook location at Scannell Field, the Bank is currently eroded and will be restored with coir fascine. There will be the introduction of shade from the timber overlooks at both locations.

The *de minimis* shading alteration is considered to be ecologically insignificant due to the abundance of shade tolerant vegetation that already exists on or near the Banks. The restoration on the shoreline with coir fascines and plantings will enhance the wildlife habitat and provide additional plant diversity. The project will have no adverse impacts to the wildlife habitat or other protected ecological functions of Bank.

3.3.2 Bordering Vegetated Wetlands

There is a combined 1,400 square feet (sf) of BVW along the Banks of the pond at the area west of Boys and Girls Club and Spy Pond Park. Approximately 85 sf of the total 1,400 sf will be altered as part of the project to repair the existing drainage outfalls described above. The rock aprons will have a beneficial impact by repairing existing eroded gravel, rock, sediment areas. Well over 85 sf of in-kind restoration is proposed with a total of 375 sf of BVW planting enhancement at the coir fascines and revegetation of footpaths within the BVW.

3.3.3 Land under Water Bodies (LUW)

The installation of the helical piers for the two overlooks, the rock aprons at the three drainage outfalls, and the addition of boulders to enhance the Engelmann's Umbrella-sedge habitat will permanently alter approximately 290 square feet of LUW without impairing the ability of Spy Pond to continue providing the ecological functions and values of LUW.

As an Ecological Restoration Limited Project, the Commission has discretionary authority to approve the proposed alteration of 290 square feet of LUW. The work is also permitted per the limited project provisions of 310 CMR 10.53(3)(k), "for the routine maintenance and repair of road drainage structures including culverts and catch basins, drainage easements, ditches, watercourse and artificial water conveyances to insure flow capacities" and 310 CMR 10.53(3)(l), for "construction, reconstruction, operation or maintenance of water dependent uses."

The presumption of significance for the ecological functions of LUW at 310 CMR 10.56(1) is fully applicable to Spy Pond. The project will fully conform to performance standards for LUW at 310 CMR 10.56(3) and (4), despite permanently altering more than 290 sf, because the proposed alteration will not impair the:

- water carrying capacity of the pond;
- ground and surface water quality;
- capacity to provide breeding habitat, escape cover and food for fisheries; and
- capacity to provide important wildlife habitat functions.

The installation of the helical pier system and the addition of boulders for enhancement of Rare Species habitat represent a *de minimis* displacement of flood storage from the pond, compensatory replacement of lost flood storage capacity is not needed to meet the performance standards for LUW. Also, the proposed reconstruction of the rock aprons for the existing drainage outfalls, will benefit the water quality and overall health of the pond by reducing pond erosion.

Short term impacts of the project on LUW will include temporary disturbances. Amphibians, fish, or waterfowl within the installation areas can escape temporary construction disturbances by moving landward into the open water of the pond interior.

3.3.4 Bordering Land Subject to Flooding

The presumption of significance for protected ecological functions of BLSF at 310 CMR 10.57(3) is applicable to the undeveloped floodplain habitats around Spy Pond but not to paved areas and other developed floodplains that lack these functions. Project work will occur within a total of 17,300 sf of BLSF, including, landscaped portions of both the 100-year floodplain. The 10-year, “lower floodplain” portions of BLSF, presumed to serve the wildlife habitat functions described in 310 CMR 10.57(1)(a)3, will not be adversely affected, but rather enhanced in several areas by native plantings.

The installation of the helical pier system and the addition of boulders for enhancement of Rare Species habitat represent a *de minimis* displacement of flood storage from the BLSF, approximately 39 cubic feet of flood storage will be lost. Approximately 360 cf of flood storage will be replaced, see Table 5-1. The flood storage lost and replaced is due to the following activity:

- Removal of existing stone boulders at an overlook and its replacement with a new timber overlook (north) with helical piers resulting in a removal of material in BLSF in Spy Pond Park (north)
- Regrading and removal of fill material at a new timber overlook in Scannell Field (south) with helical piers resulting in removal of material in BLSF
- Regrading and removal of fill material resulting in removal of material in BLSF at Spring Valley Street to reduce steep slope and stabilize the slope
- Placement of boulders down gradient of the Engelmann’s Umbrella-sedge habitat that will increase the material in the BLSF.

| TABLE 5-1 BORDERING LAND SUBJECT TO FLOODING - FLOOD STORAGE SUMMARY | | | |
|---|--|--|------------------|
| Elevation (ft., NAVD88) | Incremental Volume of Fill (cubic feet) | Incremental Volume of Excavation (cubic feet) | Net (cubic feet) |
| 3.4-4 | 23 | 23 | 0 |
| 4-5 | 16 | 79 | -63 |
| 5-6 | 0 | 117 | -117 |
| 6-7 | 0 | 88 | -88 |
| 7-8 | 0 | 43 | -43 |
| 8-9 | 0 | 10 | -10 |
| Total | 39 | 360 | -321 |

Other than the work described above, permanent alteration of BLSF will include improvements of to reduce erosion and sedimentation, while enhancing the habitats of the BLSF. The proposed landscape improvements will revegetate compacted and eroded footpaths and slopes with native plantings or structures already located within BLSF, stabilizing and enhancing the ecological value of these areas, so there will be no net loss of BLSF. Beneficial ecological impacts to the BLSF also will result from installation of native plantings to enhance the wildlife habitat functions of the lower floodplain. The project will fully conform to the presumption of significance and performance standards for BLSF at 310 CMR 10.57(3) and (4)a, such as not adversely impacting wildlife habitat. The project thus will conform to the performance standard for the flood storage functions of BLSF set forth at 310 CMR 10.57(4)a. Site drainage improvements with the addition of a vegetated swale at Scannell, which will occur within a portion of the BLSF will to reduce erosion and runoff of sediment laden water into the pond and will also stabilize and help preserve ecological functions of BLSF.

3.3.5 Buffer Zone

None of the proposed work within the BZ will adversely affect any of the wetland resource areas within or downstream of the project site. In fact, since plantings of native vegetation such as those proposed within the BZ represent beneficial impacts due to ecological improvements of existing habitat, such plantings have been exempted from regulation under the WPA, as one of the minor BZ activities identified in 310 CMR 10.02(2)(b)1(d). Replacement of existing chain-link fence at Scannell Field and installation of timber guiderail at the area west of Boys and Girls Club and Spring Valley Street and the addition of limited fencing at Spy Pond Park within the BZ are also exempt from the regulations as long as it will not constitute a barrier to wildlife movement. Any lawn areas seeded will not be new areas, but areas reseeded for restoration purposes due to the proposed work disturbances. New meadow and no-mow turf grasses are proposed in areas that are currently vegetated with lawn or paved such as Spring Valley Street, the area west of Boys and Girls Club and Scannell Field. Three existing trees at Scannell Field will be removed as part of the project for the construction of the south overlook. One 20-inch Norway Maple has already been placed on the Town's removal list due to its poor condition. The other two trees are a 22-inch silver maple and an 18-inch Norway Maple. These three trees will be replaced with six, two-foot height trees and thirty tree tubelings throughout the Site.

3.3.6 Climate Change Resiliency

The project shall meet the requirements of Section 31 of the *Town of Arlington Wetland Protection Regulations* to promote climate change resilience to protect and promote resource area values. The project shoreline improvements with coir fascines and increased vegetation as well as upland green infrastructure improvement including a grass swale and bioretention basins will result in Spy Pond being more resilient during larger storm events. Stormwater surface runoff will be improved as part of this project with the removal of impervious area at the terminus of Spring Valley Street and the addition of tall turf and meadow grass at the area west of Boys and Girls Club and Scannell Field. The resiliency of the wildlife habitat will be improved with the select removal of invasive species, see Section 3.4 below and the addition of more native enhancement plantings.

3.4 TARGETED INVASIVE REMOVAL PLAN

The proposed plan identified below addresses the most pressing species of concern, in terms of both benefit and detriment to the Spy Pond project area. Vegetation targeted for control and removal falls into one of the following categories, as described below: Nuisance and Invasive.

3.4.1 Nuisance (or Noxious) Vegetation

This category includes any vegetation that could potentially cause problems to the public, Town of Arlington employees, or maintenance crews. The overwhelming plant to be controlled in this instance is poison ivy (*Toxicodendron radicans*). Poison ivy is identified to be removed in Planting Bed 2, closest to the South Beach area.

3.4.2 Invasive Vegetation

Invasive vegetation typically consists of introduced plants that have spread from gardens and agricultural areas into the wild, where they pose problems for the natural environment. Typically, invasive plants are non-native, and generally there are no local diseases or pests to control them. Invasives reproduce and spread quickly, and thrive in disturbed conditions, outcompeting and displacing native species. This reduces biodiversity, because as the native plants disappear, so also do the insects and animals which depend on them for food and habitat.

Invasive species to be removed are identified below and derive from the Massachusetts Invasive Plant Advisory Group's (MIPAG) list of Invasive Species in Massachusetts. All the invasive species identified below will be monitored and controlled as part of this project (see Drawings SP-1 and SP-2 for specific locations).

Trees:

Acer platanoides (Norway maple) – under 2" dbh only

Ailanthus altissima (Tree of heaven) – under 2" dbh only

Shrubs:

Euonymus alatus (Winged euonymus; Burning bush)

Frangula alnus (European buckthorn; Glossy buckthorn)

Polygonum cuspidatum (Japanese knotweed; Mexican bamboo)

Rosa multiflora (Multiflora rose)

Vines:

Celastrus orbiculatus (Oriental bittersweet; Asiatic bittersweet)

Herbs:

Alliaria petiolata (Garlic mustard)

Japanese knotweed (*Polygonum cuspidatum*) is especially virulent and can be further spread by some methods of removal; eradication can take several years and is best attempted by integrating several removal methods.

3.4.3 Integrated Management Strategies

The proposed invasive species management program establishes an integrated approach that employs best management practices to create optimal conditions for plants and native plant communities, while eliminating detrimental species. Our plan incorporates:

1. Cultural practices – including preservation and restoration plantings
2. Mechanical control - mowing, hand cutting, selective trimming, etc.
3. Chemical control - low volume, cut-stem herbicide treatments

Each one of these methods has benefits and impacts, and each by itself will not work effectively for long term vegetation management. When these methods are integrated, they complement one another in terms of both effectiveness and minimization of environmental impacts. The Table 5-2 below outlines the control methods proposed for each invasive species targeted within the project area.

| TABLE 5-2 INVASIVE SPECIES MANAGEMENT PROGRAM | | |
|--|---------------|--|
| Species Targeted | Season | Control Method |
| <i>Acer platanoides</i> (Norway maple) | All | Mechanical removal of sapling with Weed Wrench |
| <i>Ailanthus altissima</i> (tree of heaven) | All | Mechanical removal of sapling with Weed Wrench |
| <i>Alliaria petiolate</i> (garlic mustard) | Late Spring | Hand pull |
| <i>Celastrus orbiculatus</i> (Oriental bittersweet) | Summer | Cut-stem treatment |
| <i>Euonymus alatus</i> (burning bush) | Summer | Cut-stem treatment |
| <i>Frangula alnus</i> (European buckthorn) | All | Mechanical removal of sapling with Weed Wrench |
| <i>Polygonum cuspidatum</i> (Japanese knotweed) | Late Summer | Cut-stem treatment |
| <i>Rosa multiflora</i> (multiflora rose) | Late Summer | Cut-stem treatment |
| <i>Toxicodendron radicans</i> (poison ivy) | Late Summer | Cut-stem treatment |

3.4.4 Integrated Controls

Combining manual removal or reduction with limited use of herbicides has shown success over years of monitoring and management of invasive plant communities. Manual removal on its own tends to disturb the root systems and stress the plant just enough to spur regeneration. Removal in this manner would require complete extraction of the entire root system with as little breakage as possible to complete this process efficiently.

In contrast, manually removing or cutting down the vegetative portion of a plant and applying herbicide directly to the stump is very effective at stressing the plant to the point where it can no longer regenerate. For example, studies have been performed to find the most effective control for Japanese knotweed populations, many methods have been used: removing the whole plant (as much of the rhizome/root structure as possible); cutting plants back to varying heights; spraying vegetative structures with herbicide throughout the season; and spraying during flowering period and combinations thereof. The most effective and efficient (both cost and energy wise) method seems to be cutting back the stems to about 1 foot in height, and applying a glyphosate-based herbicide directly to the cut stem. This needs to be repeated throughout the season, but the results will be apparent during the first growing season, and by the second year fewer individuals will grow back and they will require

fewer treatments prior to becoming overly stressed. There is no reason why this methodology would not be effective with other rhizomatous species, which are encouraged to grow by disturbing the root system. Other, less virulent species may respond to manual removal or reduction alone, but monitoring of population growth will aid in the decision whether to use chemical assistance.

3.4.5 Operational Guidelines for Herbicide Use

All vegetation management applications will comply with applicable Local, State, and Federal laws and regulations. Herbicide application will be done by either a licensed Contractor or a licensed Town of Arlington employee. In addition to the applicable rules and regulations, applicators will adhere to the following operational guidelines:

Safety

All appropriate local, state and federal safety laws and regulations will be followed. This includes applicable sections of the Massachusetts Department of Agricultural Resources Pesticide Bureau “Storage, Mixing and Loading of Pesticides Guidelines,” and all worker safety related statements and instructions on the herbicide label.

Weather

Herbicide applications will be restricted during certain adverse weather conditions such as rain and wind. Excessive wind can create drift during foliage applications causing damage to native vegetation. Herbicide applications will not be made during periods of moderate or heavy rainfall.

Herbicide Alternatives

If approved by the Town, the use of a sodium chloride-based solution applied to the leaves of poison ivy may be identified for a trial project. This type of treatment has been an effective organic alternative used at Fresh Pond Reservation.

NOTICE OF INTENT APPLICATION REPORT

SECTION 4: MITIGATION MEASURES

4.1 MITIGATION MEASURES

Impact mitigation will include the use of erosion and sedimentation controls and other construction BMPs to protect pond water quality, and the physical and biological integrity of all resource areas during construction. Staked straw wattles will be installed between all work areas and the Bank and BVW to protect these resources and LUW from sedimentation during construction. Silt sacks will be installed in catch basins near the construction work to protect the pond. During installation of the coir fascines and overlooks the water level of the pond will be temporarily lowered to elevation 2.0 ft. NAVD88 by removing boards from the outfall control structure. All controls will be placed prior to the start of construction.

Other BMPs and mitigation measures, shown on the project plans, will include:

- Onshore enhancements of native plant communities and wildlife habitat in BVW, BLSF and BZ
- Improved site drainage and management/treatment of stormwater runoff to reduce erosion
- Upland meadow and tall turf grass seeding to slow down runoff, reduce erosion and improve wildlife habitat
- Targeted removal of woody species of invasive vegetation from pond banks at the Spy Pond Park, the area west of Boys and Girls Club, and Scannell Field where technically and economically feasible
- Removal of existing stone boulders at overlook and its replacement with a new timber overlook (north) with helical piers resulting in a removal of material in LUW and BLSF in Spy Pond Park North
- Regrading and removal of fill material at a new timber overlook (south) with helical piers resulting in removal of material in BLSF
- Regrading and removal of fill material resulting in removal of material in BLSF at Spring Valley Street to reduce steep slope and stabilize the slope.
- Addition of placed boulders down gradient of the Engelmann's Umbrella-sedge habitat. Boulders placed in LUW to reduce foot traffic, protect the existing seedbank in the lower, shallow zones, and reduce wave action.

4.2 TEMPORARY EROSION AND SEDIMENT CONTROL

A comprehensive Erosion and Sediment Control and Site Preparation Plan (Sheet SP-1 and SP-2, Site Preparation Plan) has been developed to protect the Bank, Bordering Vegetated Wetland, Land Under Water Bodies, and Bordering Land Subject to Flooding during the process of construction. They will be maintained in good condition by the contractor as specified on the drawing and will remain in place until removal is authorized by the Owner's Representative.

There will be no large-scale clearing of vegetation. Selective removal of invasive vegetation will be done by hand. In areas of extreme infestation, the use of wick-applied herbicide approved for use near water bodies will be used in combination with manual methods (includes removal of poison ivy, oriental bittersweet, knotweed, buckthorn, and multiflora rose from upland areas). Exposed soils on the bank will be covered with erosion control fabric and planted as directed.

Impact mitigation measures proposed for each resource area are briefly summarized below.

4.1.1 Bank

A total of 1,530 lf of Bank will be restored as part of the project. BMPs during construction will protect Bank segments adjacent to the two locations where the overlook will cross the Bank from BLSF onto the open water of LUW. A combined total of 12 lf of Bank will be impacted. At the north overlook location, there is an existing stepping stone overlook that will be removed. The Bank will be restored with coir fascine. At the south overlook location at Scannell Field, the Bank is currently eroded and will be restored with coir fascine. There will be the introduction of shade from the timber overlooks at both locations. These overlooks are intended to focus recreational use of the Site as part of the restorative effort and minimize disruption to restored habitat. The remaining Bank will be restored with coir fascine and herbaceous plantings. No compensatory Bank creation is required due to the restoration proposed.

Three existing drainage outfalls in disrepair will be repaired via reconstruction of the rock aprons at two outfalls at Spy Pond Park and one outfall at the area west of Boys and Girls Club. The outfall protection will stabilize approximately a combined 30 lf of Bank at these locations. As these are existing areas of existing impacted Bank, no compensatory creation of Bank is required.

4.1.2 Bordering Vegetated Wetlands

There is a combined 1,400 square feet (sf) of BVW along the Banks of the pond at the area west of Boys and Girls Club and Spy Pond Park. Approximately 85 sf of the total 1,400 sf will be altered as part of the project to repair the existing drainage outfalls described above. The rock aprons will have a beneficial impact by repairing existing eroded gravel, rock, sediment areas. Well over 85 sf of in-kind restoration is proposed with a total of 375 sf of BVW planting enhancement at the coir fascines and revegetation of footpaths within the BVW.

4.1.3 Land under Waterbodies (LUW)

Mitigation of temporary construction disturbances of LUW will include temporarily lowering the elevation of the pond to 2.0 ft. NAVD88 by removing boards from the outfall control structure to protect the interior of the pond from construction activities. The installation of the helical piers for the two overlooks, the rock aprons at the three drainage outfalls, and the addition of boulders for the treatment at the Engelmann's Umbrella-sedge habitat will permanently alter approximately 290 square feet of LUW without impairing the ability of Spy Pond to continue providing the ecological functions and values of LUW. Thus, mitigation measures are proposed more to benefit the health of the pond and to enhance the value of Bank, BVW and BLSF than to comply with the performance standards for LUW. The proposed upland green infrastructure improvements and slope stabilization will reduce sedimentation and nutrient loading of the pond from soil erosion and stormwater influx, which will also help to mitigate LUW alterations by improving pond water quality.

4.1.4 Bordering Land Subject to Flooding

Approximately 17,300 sf of BLSF will be altered with 39 cubic feet (cf) of flood storage lost and 360 cf of flood storage replaced. The flood storage lost and replaced is due to the following activity described in Section 6.1 including: removal of existing stone boulders at overlook and their replacement with a new timber overlook (north) with helical piers resulting in a removal of material in BLSF at Spy Pond Park; regrading and removal of fill material at a new timber overlook (south) with helical piers resulting in removal of material in BLSF; regrading and removal of fill material resulting in removal of material in BLSF at Spring Valley Street to reduce steep slope and stabilize the slope; and the placement of boulders down gradient of the Engelmann's Umbrella-sedge habitat that increase the material in the BLSF.

The use of erosion and sediment controls and other BMPs during construction will protect those areas of BLSF not being enhanced by proposed green infrastructure and other landscaping improvements. Work in BLSF will include enhancements of native plant communities and wildlife habitat functions, as well as improved site drainage and treatment of stormwater runoff to reduce erosion impacts to the pond. The work in BLSF will enhance the habitat and protected ecological functions for this resource area, the performance standards for BLSF can be satisfied without any impact mitigation.

4.1.4.1 Straw Wattles

Proposed perimeter control along the boundary of earth disturbances due to scarifying compacted soils or regrading will include straw wattles. Straw wattles will be inspected on a weekly basis and maintained in accordance with the manufacturer's recommendations until its removal is approved by the Commission during a post-construction site visit to be held prior to issuance of a Certificate of Compliance.

4.1.4.2 Overlook Installation

The installation of helical pier footings associated with the overlooks will either be installed with equipment reaching from the shoreline or using a hand-held device from a small boat floated on the water surface. Installation will not require heavy equipment to enter the pond. Access to the pond will be limited to the existing boat ramp. South Beach will not be used for any construction access due to the presence of Engelmann's Umbrella-sedge habitat.

4.1.4.3 Staging and Stockpile Area

The contractor staging and stock pile area is proposed outside of the resource area at the Spy Pond Park parking lot on Pond Lane. The northern half of the parking lot will be used by the contractor maintaining the remaining half for parking lot for public use. The staging and stockpile area shall be maintained in good condition at all times during construction. The area shall be kept free of trash, debris, etc., to the maximum extent possible. Silt sack are proposed at the three existing catch basins in the parking lot.

4.1.4.4 Final Site Stabilization

Following construction, exposed and erodible soils will be planted and seeded according to the final planting plan and protected from erosion with temporary mulch (straw, compost, etc.) until a thick vegetative cover is established. Any areas of the site that contain bare soils and where construction is not complete shall be temporarily stabilized with an annual cover crop and temporary straw mulch.

4.1.4.5 Stormwater Management

There are no site alterations such as an increase in impervious area that effect stormwater management in this project proposal; therefore, a detailed stormwater management plan is not warranted for the project. The project will decrease impervious area with the removal of 800 sf of asphalt roadway pavement at the terminus of Spring Valley. Also, the separate trail resurfacing project referenced in Section 1.1 will replace the existing impervious stabilized aggregate surface with flexible porous pavement at Spy Pond Park further decreasing the existing impervious area. Project improvements to stormwater management are depicted on the Plans in Appendix F. Operation and Maintenance Plan is included in Appendix E.

NOTICE OF INTENT APPLICATION REPORT

SECTION 5: SCHEDULE

The improvements associated with this project are projected to occur in 2019. The work is projected to begin in April 2019 and be complete by September 2019. Please see outline of the construction schedule below.

Late Summer 2018

Spy Pond Park

- Identify location of flowering Engelmann's Umbrella-sedge within Spy Pond Park

Spring/Late Summer 2019

Spring Valley Street and Boys and Girls Club Areas

- Mobilization
- Erosion and sediment control
- Pavement removal and demolition at Spring Valley Street
- Shoreline Restoration
 - Draw pond down to install coir fascines, planting, and goose protection fence
 - Install riprap outlet protection at Boys and Girls Club outfall
 - Stabilize gullies and existing trails
 - Slope plantings
- Bioretention basin at Spring Valley Street
 - Install overflow structure and pipe connection
 - Regrade and install bioretention basin
 - Install guiderail
 - Basin and upslope plantings
- Meadow at Boys and Girls Club area
 - Install guiderail
 - Meadow seeding

Spring/Early Summer 2019

Spy Pond Park

- Replace stabilized aggregate surfacing with porous flexible paving, main pathway (separate project – RDA, not part of application)

Late Summer/Fall 2019

Spy Pond Park and Scannell Field

- Mobilization
- Erosion and sediment control
- Shoreline Restoration
 - Draw pond down to install coir fascines, planting and goose protection fence
 - Install riprap outlet protection at Spy Pond Park outfalls
 - Scarify and stabilize compacted earth pathways
 - Slope plantings
- Vegetated swale and bioretention basin at Scannell Field
- Install overlooks (2)

NOTICE OF INTENT APPLICATION REPORT

SECTION 6: SUMMARY

The proposed shoreline ecological restoration project along Spy Pond at Spy Pond Park, Scannell Field, the terminus of Spring Valley Road, and the area west of the Boys and Girls Club is designed to expand and enhance the functional and structural ecology of Spy Pond resource areas while providing amenities for ongoing public use. The proposed project will restore degraded and heavily eroded areas of Bank by using bioengineered bank stabilization treatments, enhancement plantings, select invasive species management, green infrastructure stormwater management, and installing two timber overlook structures on helical pier footings to focus recreational use of the Site as part of the restorative effort and minimize disruption to restored habitat. The proposed plant palette will promote biologically diverse flora enhanced through the removal of invasive species and the planting of native species based on a native community planting approach.

As discussed above, there will be minimal impacts to BVW and the temporary construction disturbances and long-term impacts of the project on Bank, LUW, and BLSF will not have a significant, adverse ecological impact on the protected ecological functions and societal benefits/services provided by each of these resource areas. Due to the overall benefits of the project to the ecological health of the pond and onshore resource areas, from the combination of landscape improvements and impact mitigation measures, the project will fully comply with all relevant performance standards enumerated in the Act, the Act Regulations, the Bylaw, and the Bylaw Regulations.

WETLAND RESOURCE AREA ANALYSIS AND REPORT

SECTION 7: LITERATURE CITED

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APPENDIX A
WETLAND RESOURCE AREA ANALYSIS REPORT



July 16, 2018

Email (hilary.holmes@hatch.com)

Ms. Hilary A. Holmes
Hatch Chester Engineers
27 Congress Street, Suite 508
Salem, MA 01970

**Re: Wetland Resource Area Analysis Report
Spy Pond Bank Stabilization Project - Phase 2
Arlington, Massachusetts**

[LEC File #: HCE\17-219.02]

Dear Ms. Holmes:

Pursuant to your request, LEC Environmental Consultants, Inc., (LEC) conducted a site evaluation and Wetland Resource Area boundary determination at four locations on Spy Pond in Arlington, Massachusetts. Our site evaluation was conducted in accordance with the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40, the *Act*) and its implementing Regulations (310 CMR 10.00, the *Act Regulations*), and the *Town of Arlington Wetland Protection Bylaw* (Article 8, the *Bylaw*) and its implementing Regulations (the *Bylaw Regulations*), and the criteria provided in *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act* (March 1995) and *Field Indicators for Identifying Hydric Soils in New England* (May 2017). This effort is in support of a Notice of Intent (NOI) Application filed by your office, on behalf of the Town of Arlington, for an Ecological Restoration Project to restore and stabilize the eroding Banks along Spy Pond. The following report provides a general site description, wetland delineation methodology, and a description of the Wetland Resource Areas associated with the Site.

General Site Description

Spy Pond is located southwest of Massachusetts Avenue, southeast of Pleasant Street, and north of the Concord Turnpike, within the southeastern portion of Arlington, Massachusetts (Attachment A, Figures 1 and 3). The Site is located along portions of the northern and eastern Bank of Spy Pond and includes five (5) town-owned parcels consisting of Spy Pond Park (Parcel IDs: 9-3-1 & 9-3-3), Scannell Field (Parcel ID: 9-4-1), undeveloped land to the west of the Boys and Girls Club of Arlington (Parcel ID: 121-6-2), and undeveloped land south of Spring Valley Street (Parcel ID: 122-4-10). Residential development typically occurs adjacent to each parcel.

The developed portions of the Site, located within Spy Pond Park and Scannell Field, contain recreational and outdoor use areas, including a paved parking lot, playground, and a walking trail extending from the

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parking lot to the *cul-de-sac* terminus of Linwood Street. Intermittent access to Spy Pond occurs along the walking trail via a boat ramp, several boulder overlooks, and a grass ‘beach’ area north of the Linwood Street *cul-de-sac*. A baseball field (Scannell Field) occurs south of *cul-de-sac*.

A narrow band of forested land occurs along the Bank to Spy Pond within the Site. This forested land is primarily comprised of forested upland, with narrow areas of forested wetlands located adjacent to Spy Pond Park, and the Boys and Girls Club. Topography within Spy Pond Park and Scannell Field is generally flat, with gentle slopes descending toward the Bank, while topography associated with the Boys and Girls Club and Spring Valley Street contains moderate slopes and more abrupt breaks in topography separating Spy Pond from adjacent land. Informal walking paths occur immediately adjacent to the Bank at Spy Pond Park, Scannell Field, and the Boys and Girls Club, resulting in compacted soil conditions with little to no vegetation and/or erosion of soil immediately adjacent to Spy Pond. Soil erosion is also evident at the terminus of Spring Valley Street where stormwater run-off and a fallen tree have compromised the Bank.

Vegetation within the forested uplands includes a moderately dense canopy of Norway maple (*Acer platanoides*), with individual silver maple (*Acer saccharinum*), mulberry (*Morus* sp.), black cherry (*Prunus serotina*), red maple (*Acer rubrum*), eastern cottonwood (*Populus deltoides*), tree of heaven (*Ailanthus altissima*), black locust (*Robinia pseudoacacia*), and willow (*Salix* spp.), including pussy willow (*Salix discolor*). The understory contains patches of false indigo bush (*Amorpha fruticosa*), European buckthorn (*Frangula alnus*), with individuals of saplings from the canopy, sapling American linden (*Tilia americana*), rose (*Rosa* spp.) including entanglements of multiflora rose (*Rosa multiflora*), crab apple (*Malus* sp.), common buckthorn (*Rhamnus cathartica*), burning bush (*Euonymus alatus*), and entanglements of Oriental bittersweet (*Celastrus orbiculatus*). Patches of Japanese knotweed are located near the northwestern edge of Spy Pond Park. The groundcover contains patches of mugwort (*Artemisia vulgaris*), poison ivy (*Toxicodendron radicans*), goldenrods (*Solidago* spp.) including rough-stem goldenrod (*Solidago rugosa*), bluestem goldenrod (*Solidago caesia*), and lance-leaf goldenrod (*Solidago lanciolata*), aster (*Symphotrichium* spp.), including purple-stemmed aster (*Symphotrichium puniceus*), ragweed (*Ambrosia artemisiifolia*), boneset (*Eupatorium perfoliatum*), and yarrow (*Achillea millefolium*). Entanglements of sweet autumn clematis (*Clematis paniculata*) also were observed, with individual patches of red clover (*Trifolium pratense*), wild carrot (*Daucus carota*), Canada hawkweed (*Hieracium canadense*), St. John’s wort (*Hypericum perforatum*), hay-scented fern (*Dennstaedtia punctilobula*), butter-and-eggs (*Linaria vulgaris*), and individuals of dock (*Rumex* sp.), chicory (*Cichorium intybus*), tansy (*Tanacetum vulgare*), and various grasses including foxtail (*Setaria* sp.).

According to the Natural Resource Conservation Service (NRCS) Soil Survey (Web Soil Survey and Middlesex County, Massachusetts, Version 16, September 14, 2016), the Site consists primarily of Udorthents, Loamy Soil, while the Spring Valley Street site contains Hinckley loam sand, 15 to 25 percent slopes. NRCS describes Udorthents, Loamy Soil as ‘nearly level and rolling areas where the original soil has been cut away or covered with loamy fill material.’ Hinckley soils are described as ‘very

deep, excessively drained soils on escarpments and side slopes of glacial outwash terraces, mounds, and long sinuous ridges.’

LEC inspected soil conditions within the upland areas along Spy Pond using a Dutch-style soil auger and generally observed a sandy loam topsoil (A Horizon) measuring roughly six (6) inches thick with a soil matrix color of 10YR 3/2. The topsoil is underlain by a weathered, sandy loam subsoil (B_w Horizon) measuring roughly nine (9) inches thick with a soil matrix color of 10YR 3/3. Refusal was generally encountered at 15 inches. Generally, no redoximorphic concentrations were observed within the upland soil profile, or if they were observed, occur too deep within the soil column and/or within a high chroma subsoil matrix. The observed soil profiles within the upland are not considered ‘hydric’ in accordance with the *Field Indicators Guide*.

Natural Heritage and Endangered Species Program (NHESP) Designation

According to the 14th Edition (August 1, 2017) of the Natural Heritage Endangered Species Program (NHESP) *Massachusetts Natural Heritage Atlas*, Spy Pond and its adjacent surrounding areas are located within *Priority Habitat of Rare Species* (PH 1421, Attachment A, Figure 4). According to NHESP, this *Priority Habitat* is mapped for the Engelmann’s Umbrella-sedge (*Cyperus engelmannii*).

Wetland Boundary Determination

On September 7, 2017, LEC conducted a site evaluation to identify and characterize existing protectable Wetland Resource Areas within the Site associated with Spy Pond as set forth by Hatch Chester Engineering. Based on our observations, LEC determined that Bank, Bordering Land Subject to Flooding (BLSF), and Land Under Water Bodies and Waterways (LUW) occurs on all four sections of the Site, and forested Bordering Vegetated Wetlands (BVW) occur along the Bank adjacent to Spy Pond Park and the Boys and Girls Club.

LEC delineated the Bank and BVW boundaries with sequentially-numbered, safety blue (Bank) or blaze-orange (BVW) surveyor’s tape. LEC BVW flagging stations 1 through 11 demarcate the BVW boundaries along Spy Pond Park, and 1A through 5A demarcate the BVW boundary along the Boys and Girls Club. LEC Bank flagging stations 1 through 44 demarcate the Bank adjacent to Scannell Field and Spy Pond Park, while 1A through 14A demarcate the Bank along the Boys and Girls Club, and 1B through 4B demarcate the Bank at the terminus of Spring Valley Road.

Bordering Vegetated Wetland

According to the *Act Regulations* [310 CMR 10.55(2)], Bordering Vegetated Wetland (BVW) is defined as: *freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes...Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants...The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist*

According to the *Bylaw Regulations* (Section 21.B.1) *Vegetated Wetlands are freshwater wetlands, including both bordering vegetated wetlands (i.e., bordering on freshwater bodies such as on creeks, rivers, streams, ponds, and lakes), and isolated vegetated wetlands which do not border on any permanent water body. The types of freshwater wetlands are wet meadows, marshes, swamps, bogs, and vernal pools. Vegetated Wetlands are areas where soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground water and surface water hydrological regime, soils, and the vegetational community which occur in each type of freshwater wetlands, including both bordering and isolated vegetated wetlands, are defined under the bylaw based on G.L. C. 131 § 40.*

Four areas of BVW occur along the Bank adjacent to Spy Pond Park. Vegetation within these BVWs includes a sparse canopy of red maple, silver maple, and willow, with scattered individuals of grey birch (*Betula populifolia*) and quaking aspen (*Populus tremuloides*). The understory is similarly sparse and contains scattered patches of sweet pepperbush (*Clethra alnifolia*), false indigo bush, European buckthorn, and individuals of saplings from the canopy. The groundcover is comparatively dense and contains patches of rough-stem goldenrod, sensitive fern (*Onoclea sensibilis*), and entanglements of sweet autumn clematis, with individual patches of common water-primrose (*Ludwigia palustris*), bittersweet nightshade (*Solanum dulcamara*), iris (*Iris* sp.), Asiatic dayflower (*Commelina communis*), purple loosestrife (*Lythrum salicaria*), wild carrot, and individuals of beggarticks (*Bidens* spp.), water horehound (*Lycopus americanus*), smartweed (*Polygonum* sp.), and various sedges including slender flatsedge (*Cyperus bipartitus*), broom sedge (*Carex scoparia*), Engelmann's umbrella-sedge (*Cyperus engelmannii*), umbrella sedge (*Cyperus strigosus*), and fox sedge (*Carex vulpinoidea*).

Utilizing a hand-held, Dutch-style auger, LEC inspected soils within the BVW and generally observed a 5-inch thick, loamy sand topsoil (A horizon) with a soil matrix color of 10YR 2/2. The topsoil is underlain by a 15-inch thick, depleted subsoil (B_g Horizon) with a soil matrix color of 2.5Y 4/2. Redoximorphic depletions with a color of 2.5Y 4/1 were observed starting at six (6) inches from the soil surface. Refusal was generally encountered at 15 inches. This soil profile is considered 'hydric' in accordance with the *Field Indicators Guide*.

Bank

Bank is defined in the *Act Regulations* [310 CMR 10.54(2)(a)] as *the portion of land surface which normally abuts and confines a water body. The upper boundary of a bank is the first observable break in the slope or the mean annual flood level, whichever is lower. The lower boundary of a bank is the mean annual low flow level.*

Bank is defined in the *Bylaw Regulations* (Section 20.B.1.) as *the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent floodplain, or, in the absence of these, it occurs between a water body and an upland. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, or stone.*

The Bank to Spy Pond within the Site is contained within gradual to nearly vertical slopes measuring roughly 12 to 18 inches in height, and comprised of exposed/eroding soils of sand and gravel. This erosion appears to be occurring due to both wave action and foot traffic along the Banks of Spy Pond. Shallow and more significant Bank undercuts and exposed roots also were observed along the Banks. The Bank within Spy Pond Park proximate to Bank flags 12 through 17 is located along a vertical boulder retaining wall. Vegetation along the Banks is variable, but generally includes many of the scattered canopy trees, shrubs, saplings, and groundcover plants listed in the BVW description above.

Bordering Land Subject to Flooding (BLSF)

Bordering Land Subject to Flooding (BLSF) is defined in the *Act Regulations* [310 CMR 10.57(2)(a)] as *an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland... The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP, currently administered by the Federal Emergency Management Agency, successor to the U.S. Department of Housing and Urban Development). Said boundary, so determined, shall be presumed accurate...*

Land Subject to Flooding is defined in the *Bylaw* [Section (9)(G)] as *the land within the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm; said boundary shall be that determined by reference to the most recently available flood profile data prepared for Arlington within which the work is proposed under the National Flood Insurance Program ("NFIP"). Where NFIP data are unavailable or outdated, the boundary of said land and shall be based on the maximum Lateral extent of flood water which has been observed or recorded, or other evidence presented and considered by the Commission. Said land shall also include isolated areas which frequently or seasonably hold standing water; such areas may or may not be characterized by wetland vegetation or soil characteristics.*

According to the June 4, 2010 *Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM)* for Middlesex County, Massachusetts (Map No: 25017C0416E and 25017C0417E), Spy Pond and land immediately adjacent to its Bank are located within Zone A: *Special Flood Hazard Areas (SFHAs) subject to Inundation by the 1% Annual Chance Flood; No Base Flood Elevations determined.* The remainder portions of the site are located within Zone X (unshaded): *Areas determined to be outside the 0.2% annual chance floodplain.* The land extending from the Bank or BVW boundaries to the Zone A boundary is considered BLSF in accordance with the *Act Regulations* and the *Bylaw*.

Land under Water Bodies and Waterways (LUW)

Land under Water Bodies and Waterways is defined in the *Act Regulations* [310 CMR 10.56 (2)(a)] as *the land beneath any creek, river, stream, pond, or lake. Said land may be composed of organic muck or*



peat, fine sediments, rocks, or bedrock...the boundary of Land under Water Bodies and Waterways is the mean annual low water level.

LUW is defined in the *Bylaw Regulations* [Section 22 (b)] as *the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock. ...The boundary of land under water bodies is mean low water level*

LUW associated with Spy Pond extends from the lower boundary of Bank, and primarily contains sands and gravels. Little to no vegetation within LUW was observed.

Summary

LEC conducted a site evaluation and wetland delineation on September 7, 2017 to determine the extent of Wetland Resource Areas subject to jurisdiction under the *Act* and *Act Regulations*, *Bylaw*, and *Bylaw Regulations*. Based on our site evaluation and review of pertinent maps included herein, LEC determined that the Wetland Resource Areas include BVW, Bank, BLSF, and LUW associated with Spy Pond. The Bank restoration and stabilization efforts proposed by the Town of Arlington will require compliance with performance standards enumerated in the *Act Regulations* and *Bylaw Regulations*, and filing for the appropriate permits with the Arlington Conservation Commission, the Massachusetts Department of Environmental Protection, and/or NHESP.

Thank you for the opportunity to provide these services. Should you have any questions or require additional information, please do not hesitate to contact me in our Wakefield office at (781)-245-2500 or via email at rkirby@leceenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

A handwritten signature in black ink, appearing to read "Richard Kirby", is written over a light gray circular stamp.

Richard Kirby
Senior Wetland Scientist

Attachment

RAK: projects\17-219.02 HCE\Wetland Resource Analysis.pdf

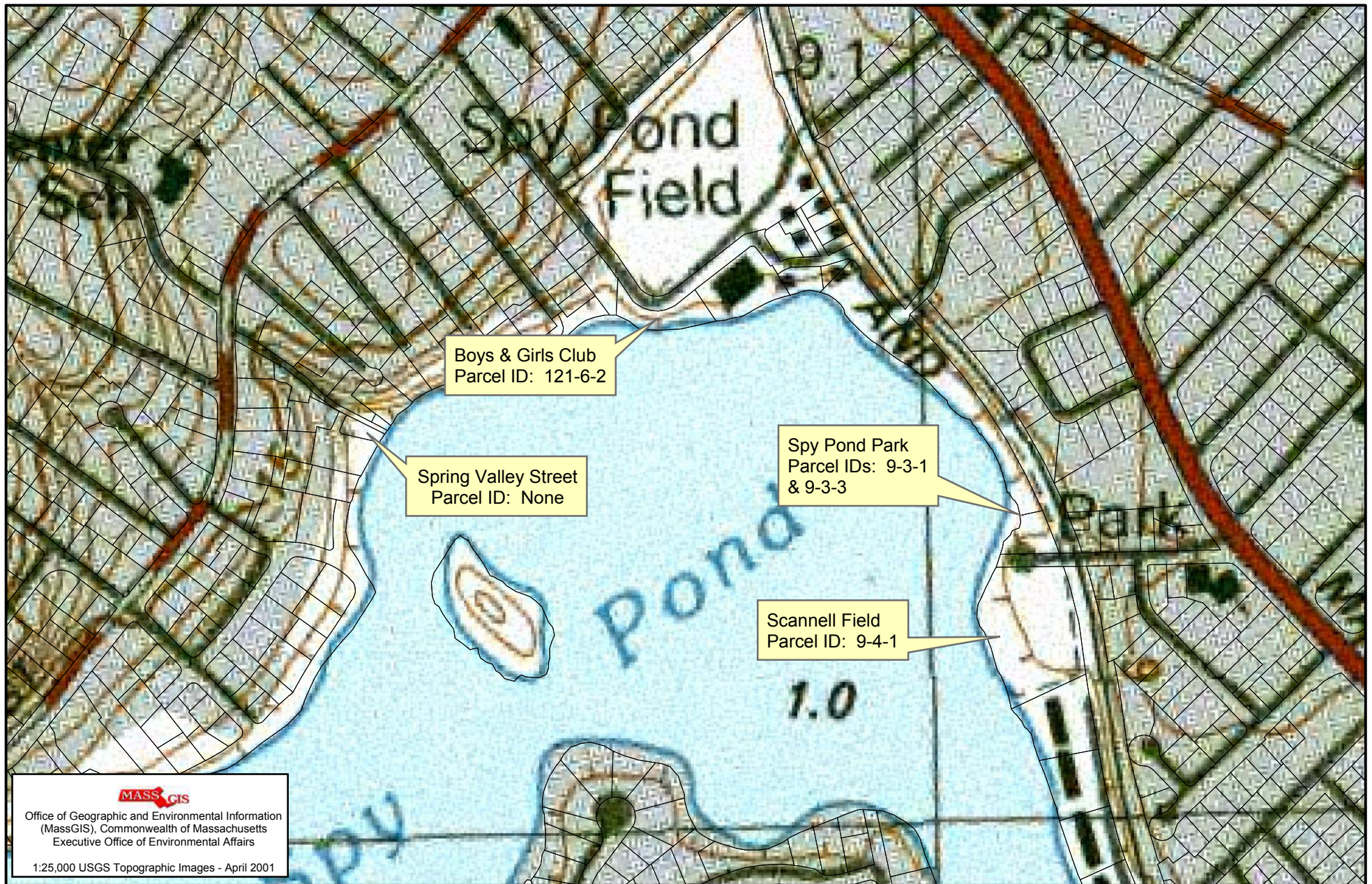
Attachment A

Figure 1: USGS Topographic Map

Figures 2A and 2B: FEMA Flood Insurance Rate Maps

Figure 3: MassGIS Aerial Orthophoto

Figure 4: MassGIS Aerial Orthophoto with NHESP Priority Habitat Data Layer



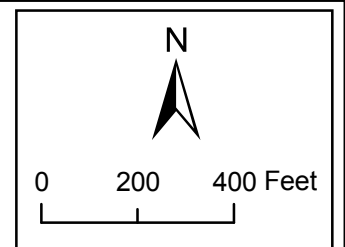
LEC

Environmental Consultants, Inc.
Wakefield, MA
781.245.2500
www.lecenvironmental.com

Figure 1: USGS Topographic Map
Spy Pond Project - Phase 2
Arlington, MA

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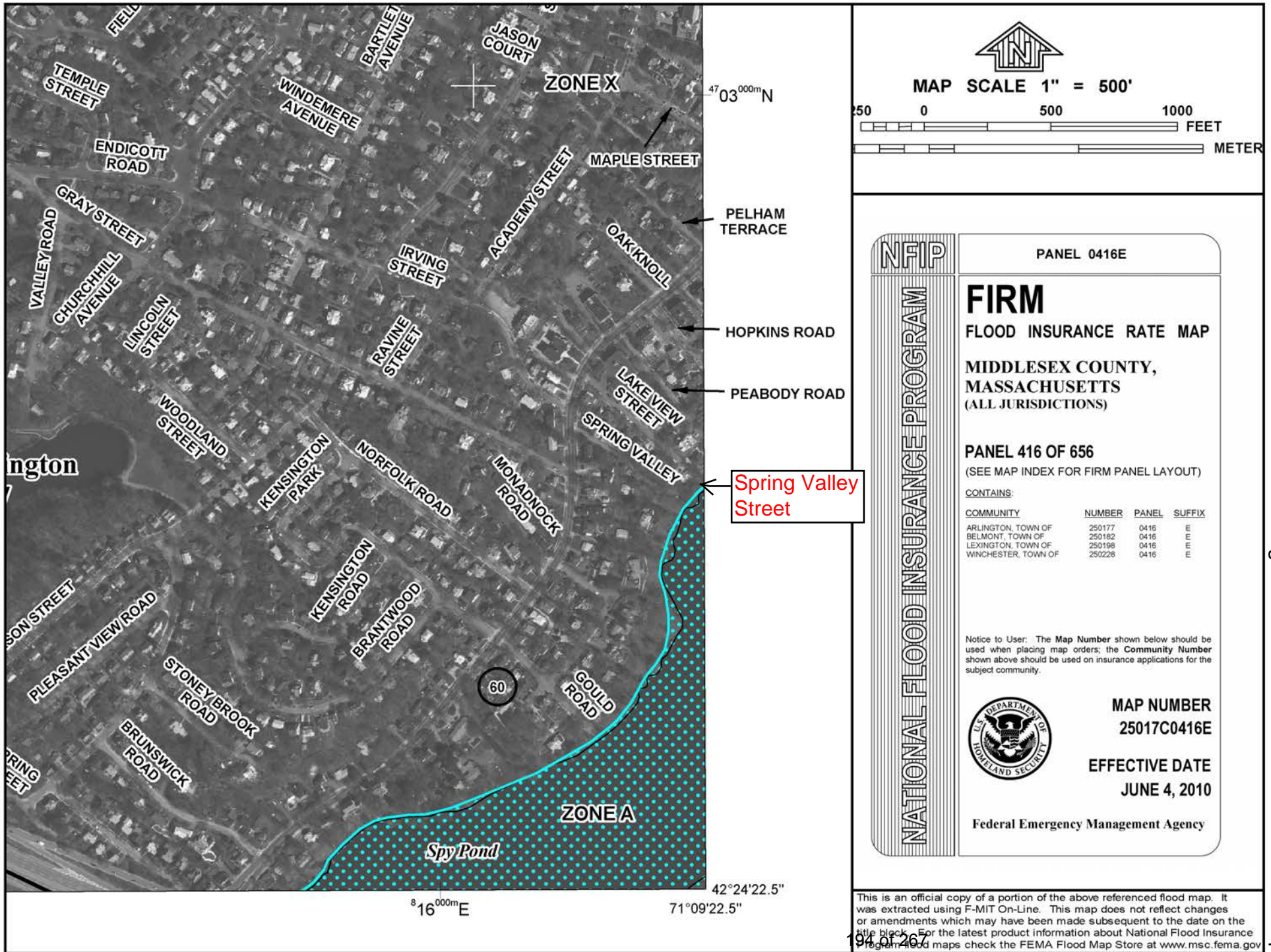


Figure 2A: FEMA Flood Insurance Rate Map

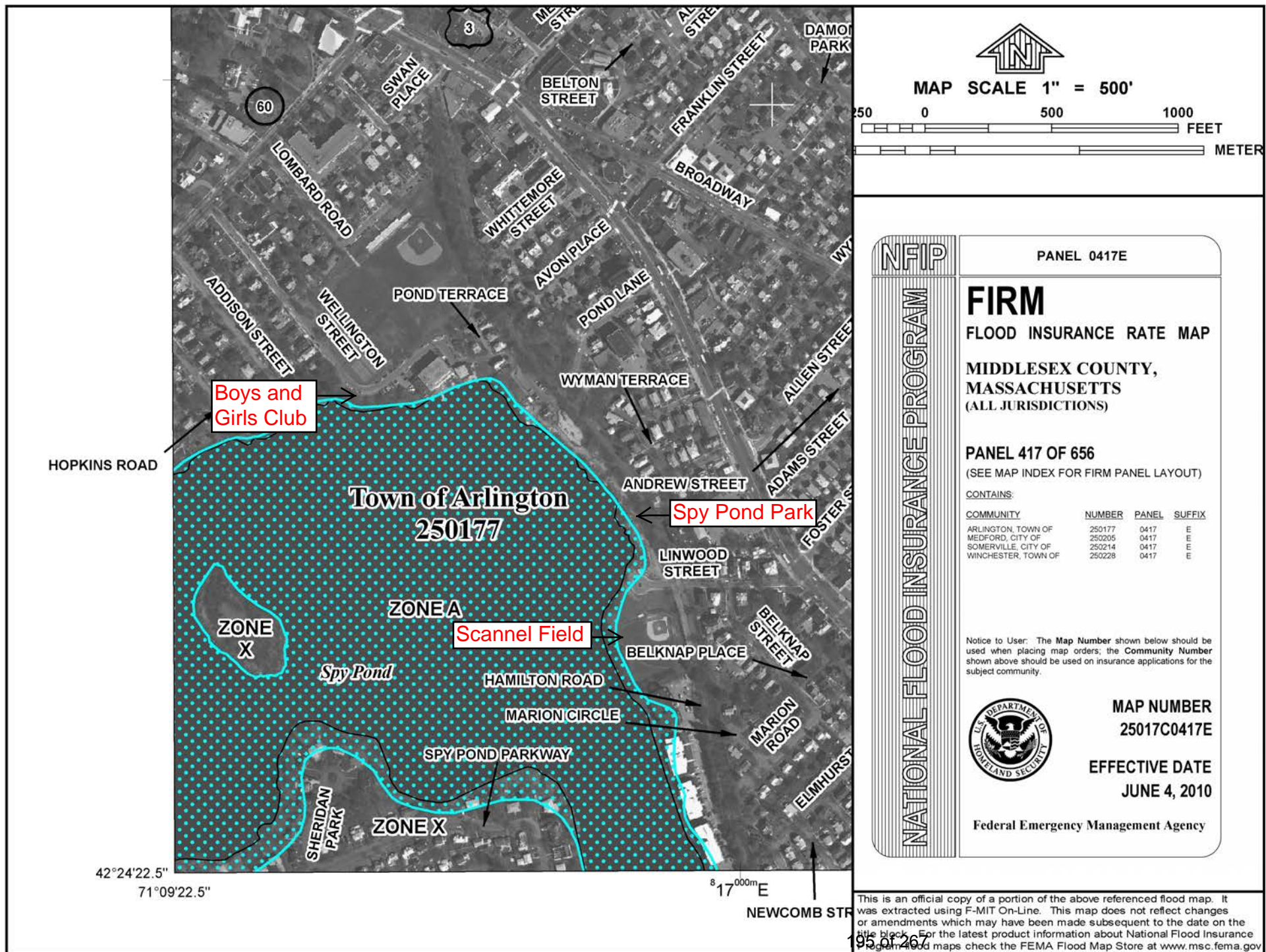


Figure 2B: FEMA Flood Insurance Rate Map

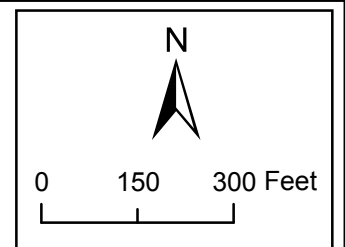


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Figure 3: MassGIS Orthophoto
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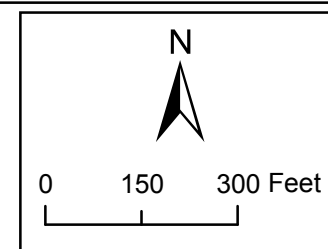


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Figure 4: MassGIS Orthophoto & NHESP Map
Spy Pond Project - Phase 2
Arlington, MA

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APPENDIX B
SITE CHARACTERIZATION REPORT

Spy Pond Edge Protection and Erosion Control Project

Site Characterization Report

Town of Arlington

December 2016



Introduction

Considerable effort has been expended in recent years to create an ecologically viable, functionally efficient and aesthetically pleasing facility at Spy Pond. During the mid-19th century Spy Pond provided drinking water to the people of Arlington, however, it was abandoned due to increased human activity in the vicinity, including commercial gardening that yielded sediments and nutrients in runoff resulting in extensive weed growth. This situation became prevalent in the early 1900s. Around that time, farms were being converted to lots and roads as the community became increasingly urbanized further affecting water quality that continued to decline with the proliferation of stormwater outfalls. Nevertheless, as a respite from daily activities Spy Pond continued to serve as a focal point for rest and relaxation within the community.

In a 1980-81 Diagnostic Study of Spy Pond by the Massachusetts Division of Water Pollution Control the authors observed that public use and enjoyment of Spy Pond had declined in recent years. The current situation, however, is clear evidence that restoration work in the park over the past decade has been effective and Spy Pond is once again a major focal point for the community. There are, however areas within the park, adjacent to Scannell Field on the east end and adjacent to the Boys and Girls club at the west end where uncontrolled use has created deteriorating conditions that impact water quality and long term sustainability.

Existing Information Sources

Eleven documents were provided by the Town of Arlington Conservation Commission for review to gain familiarity with the significant issues to be dealt with as identified over the past 30 years. These include:

1. **Plan of Route 2 Spy Pond Outlet, prepared for MassDOT** - The reconstructed roadway has 11 outfalls that directly flow into Spy Pond with minimal mitigation measures. Water levels are given based on the 1929 MDPW datum. NAVD 88 datum elevations are provided in brackets. Outlet Spillway elevation 4.17' [3.37'], Historic High water (October 22, 1996) 7.00' [6.20'], typical water elevation (1987-1996) 4.50' [3.70'], Historic Low water (1985-1987) 2.0' +/- [1.2'].
2. **Plans of Route 2 Drainage Repairs and Improvements at Various Locations (Spy Pond), RDA Submission, prepared for MassDOT** - These improvements are unrelated to Spy Pond.
3. **Request for Determination of Applicability prepared by Vanasse Hangen Brustlin, Inc. (VHB), for Route 2 Stormwater Improvements, 2012** - This project has no relationship to the issues under consideration for this project.
4. **Spring Valley Street, Arlington, Concept Plan for a Green Infrastructure Retrofit prepared by Chester Engineers, 2014** - This proposal will be incorporated into this project for consideration.

5. **Spy Pond Bank Stabilization by William Green Associates, 1992** – Solution based on water level of 4.08 as of November 1990. Bank stabilization relies on stone toe with erosion control blanket and ornamental planting on the bank.
6. **Spy Pond Park, 50% Construction Documents prepared by Carol R. Johnson Associates, 2004** - Several areas are identified with various techniques for bank stabilization that are currently not evident on-the-ground with the exception of a stone slope and a stabilized planting area with stacked coir logs along the shore at the end of Linwood Street.
7. **Characterization and Cycling of Phosphorus and Arsenic in Spy Pond prepared for Massachusetts Department of Environmental Management, Lakes and Ponds Program, 2000** - High inputs of phosphorus have caused the pond to become hypereutrophic, resulting in high rates of sedimentation and algal growth.
8. **Review of Recommendations for the Restoration of Spy Pond, Arlington prepared by Hydroanalysis Inc., 1997** - Controls on stormwater that reduce phosphorus reaching the pond are preferable to in-pond controls. Wetland treatment remains a viable alternative for stormwater treatment flowing to Spy Pond.
9. **Feasibility Study of Lake Restoration in Spy Pond, Arlington prepared by the Environmental Design and Planning, Inc., 1982** - Excerpt including the table of contents.
10. **Spy Pond, A Diagnostic Study, 1980-1981 prepared by the Massachusetts Department of Environmental Quality Engineering** - Spy Pond was classified as a eutrophic lake. The major source of nutrients causing the eutrophic conditions was from the stormwater runoff entering the lake.
11. **Spy Pond Stormwater Management Program (s319) prepared by the Town of Arlington, 2007** – Priority pollutants targeted include phosphorous, sediment, suspended solids removal. Installation of leaching catch basin and baffle tanks to reduce phosphorous input into the pond.
12. **Updated Recommendations for Shoreline Restoration prepared by Carol R. Johnson Associates, 2014.**
13. **NOI for Spy Pond Condominium Assn. prepared by New England Environmental, 2010.**

Site Analysis

To account for variable conditions on the ground, the project has been divided into four separate areas as follows:

- Area 1 – Scannell Field
- Area 2 – Spy Pond Park
- Area 3 - Boys & Girls Club
- Area 4 – Spring Valley Street

Please refer on the next page to **Figure 1 - Project Area Locations**.

Figure 1 – Project Location



Prior to developing a full site characterization for each of the four areas, a set of criteria was created to establish the relative stability of the shoreline edge in each area and the need for erosion control. Three classifications with criteria were established as follows:

| Table 1. Shoreline Categorization | | |
|--|---|---|
| Stable | Marginally Stable | Unstable |
| <ul style="list-style-type: none">• Vegetated or hardscaped• Uncompacted soil• Controlled human use• Shallower slope• Controlled stormwater runoff• Hard or soft edge | <ul style="list-style-type: none">• Scattered loss of vegetation• Compacted soils• Uncontrolled human use | <ul style="list-style-type: none">• Loss of stabilizing vegetation• Compacted soil• Uncontrolled human use• Steep slope• Uncontrolled stormwater runoff |

Area 1 – Scannell Field (Unstable)

Figure 2 – Area1: Scannell Field



Access and Circulation

The Linwood Street cul-de-sac provides primary access to this area, located on the east side of Spy Pond just south of Spy Pond Park. It is accessible by vehicle, bicycle, or on foot. There is limited two-hour parking in this area so some visitors will likely use the parking lot at the north end of Spy Pond Park and walk.

Circulation on-site is, primarily, foot traffic, either to play or observe a ball game, or to gain access to the pond in a more remote location within the Spy Pond Park. Herein lies the problem since there are no formal pathways that provide access to the water on the pond side of the fence that separates the ball field from the slope to the water.

Existing Vegetation and Habitat Conditions

Numerous old growth trees line the shoreline with extensive root structures providing partial stabilization to portions of the slope and the vertical bank in the vicinity of the water line. In many cases, however, the roots are being undermined by wave action that has eroded soil for depths up to two feet into the slope beneath the roots. Considerable erosion is occurring along vertical banks that are not contained by roots.

There is distributed shrub cover on the slope with root masses to assist in soil stabilization, however, the uncontrolled foot access has created numerous pathways starting along the fence line directly downslope to the water's edge. In these locations vegetation is eliminated and the compacted soil is exposed to erosion exacerbated by uninterrupted sheet flow across the athletic field. Erosion has exposed the roots of many of the old growth trees with ongoing contributions to sediment buildup within the pond.



Photograph 1: Tree with Exposed Roots

The majority of the area is in poor condition with dead and dying trees, exposed roots, unstable banks, extensive areas of eroding soils, and litter that will require a comprehensive approach to stabilization including control of the human activity that is at the root of the problem.



Photograph 2: Erosion with Visible Undercutting



Photograph 3: Erosion and Lack of Vegetation



Photograph 4: Unstable Bank with Exposed Roots and Undercutting

As riparian habitat this area provides cover and food for a variety of small mammals and birds. The deteriorating condition of the slope, however, creates a condition that is less than optimal. Furthermore, the fishery is further degraded by ongoing sedimentation within the water column.

Water Quality

In addition to an actively eroding slope that contributes sediment to the pond, uninterrupted runoff from the athletic field, a likely source of nitrogen and phosphorous fertilization also affects the perennial decline of Spy Pond water quality.

Figure 3– Area1: Scannell Field, Uncontrolled Runoff & Erosion on Slope



Potential Infiltration Areas

As stated above, sheet flow across the athletic field is a likely source of contamination in the pond and, it also contributes to accelerated erosion on the slope. Mitigation is possible by constructing a linear swale along the fence line to stimulate infiltration. The swale could be linked to a bioretention basin in the open area near the cul-de-sac for more effective pollutant removal.

Area 2 – Spy Pond Park (Marginally Stable)

Figure 4 – Area 2: Spy Pond Park



Access and Circulation

Area 2 is the primary destination for those who are visiting Spy Pond Park. There are four locations for both vehicular and pedestrian access from the nearby residential and commercial areas. Pond Lane provides the primary access to the parking area located at the north end of the park. A secondary access through the parking area is from Wellington Street, further to the west in the vicinity of the Boys and Girls Club. Linwood Street leads to a cul-de-sac on the east side of the park providing access to the park facilities on one side and the Scannell Field on the other. This is primarily a drop-off and pick-up area since the two-hour parking is limited. The Minuteman Commuter Bikeway crosses Linwood Street a short distance uphill from the cul-de-sac providing additional access to Spy Pond Park.

Circulation on site is primarily for pedestrians along designated pathways that provide access to all facilities, including a grassed slope leading to the beach, picnic tables, access points to the water for fishing or relaxation, benches, a children's play area, and a boat ramp for launching small, non-motorized boats, canoes and kayaks. The site improvements to the park were part of the restoration project completed in 2006, see **Figure 5** below.

Figure 5 –Spy Pond Park Restoration

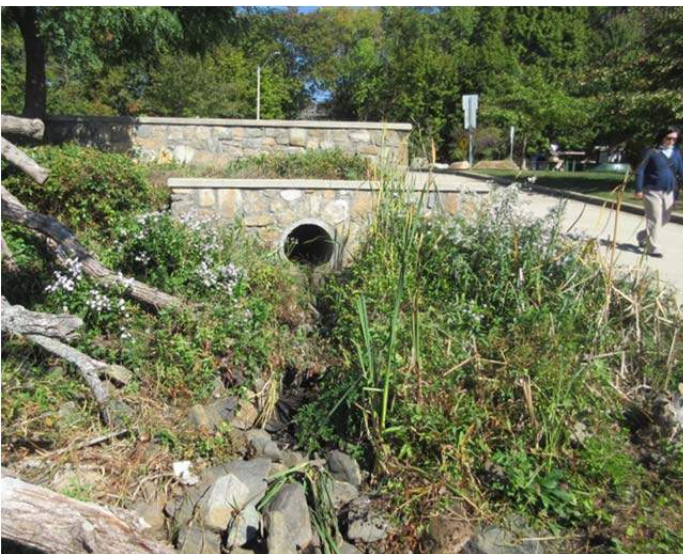


For the most part pedestrians limit themselves to the defined pathways; however, desire lines do exist along the slope to the pond in a few locations between the boat ramp and the beach providing additional access to the water. These informal pathways eliminate stabilizing vegetation that lead to erosion and, consequently, sedimentation in Spy Pond.



Photographs 5 and 6: Foot Paths in Plant Beds with Compacted Soil and Erosion

The area west of the boat ramp on the slope between the water and the retaining wall near the parking lot was not part of the renovations in 2006. This area is essentially removed from the center of activity in the park but it apparently attracts visitation as indicated by the casual pathways and loss of stabilizing vegetation. Dead and dying trees and a poorly maintained stormwater outfall indicate neglect for this somewhat isolated portion of the park.



Photograph 7: 18-inch Stormwater Outfall



Photograph 8: Foot Path along Stone Wall

Existing Vegetation and Habitat Conditions

With a few exceptions, on site vegetation appears to be healthy and well maintained. Outliers include the areas where uncontrolled pathways eliminate the plant growth that provides soil stabilization, particularly west of the boat ramp. Also, along the immediate shoreline, in a few cases where there is a

slight escarpment with no stabilizing tree roots, wave action has eliminated the stabilizing vegetation. There were also a couple of areas where the exposed tree roots along the bank are being undercut by wave action. The line between turf and the north beach is poorly defined and requires some material presence to clearly articulate the boundary.



Photograph 9: Eroded Pond Edge



Photograph 10: Exposed Tree Roots Being Undercut

A well-defined tree and shrub layer on the slope up to the adjacent bikeway provides cover and food for both small mammals and birds. Shrubs and trees along the shoreline provide additional cover. Spy Pond itself can provide some warm water fish habitat although as a water body classified as hypereutrophic it has limitations. The accompanying excessive plant growth, occasional algal blooms, low dissolved oxygen content, low transparency, etc. limit species diversity and, consequently, sport fishing opportunities.

Water Quality and Water Level Management

The total watershed area draining to Spy Pond is 964 acres. The entire watershed with one small exception at Menotomy Park drains through 43 separate outfalls into Spy Pond (Existing Information Source #10, page 2). High inputs of phosphorous have caused the pond to become hypereutrophic. Stormwater runoff and dry weather base flow from a very urban area are the primary contributors to the problem. In addition, there are substantial amounts of both phosphorous and arsenic in the upper 10 to 20 centimeters of the sediments that includes past agricultural use and runoff to the pond. Transport of the sediments into the water column occurs during spring and fall turnover; however, phosphorous inputs in stormwater runoff appear to be as much as 3 to 6 times higher than sediment inputs.

Water level management can be an effective tool for managing water quality. Winter drawdown of the lake surface has at least two beneficial outcomes, controlling macrophytes and reducing shoreline erosion. Lowering the water level by at least three feet in winter exposes shallow aquatic plants to drying and freezing. Plants most affected are Eurasian watermilfoil (*Myriophyllum spicatum*) and Coontail (*Ceratophyllum demersum*). In addition, bank erosion can be reduced by removing accelerated wave action from winter storms and ice buildup from the immediate shoreline (Existing information source #8, page 2).

Area 3 – Boys & Girls Club (Unstable)

Figure 6 – Area 3: Boys & Girls Club



Access and Circulation

Wellington Street is the primary access to this area, although it can be reached via the Pond Lane Extension that links to the Spy Pond Park parking area. There are spaces for 28 cars in the area but this is primarily to serve the adjacent Boys and Girls Club. Abutting the parking area is a grassed strip of land above the steep slope down to Spy Pond that is used for snow storage in the winter.

Because this area is relatively isolated from the rest of Spy Pond Park, it is not as heavily used. There is no formal access to the pond and so casual pathways down and across the vertical slope have evolved in several locations over time. All of these informal access areas are eroding and contributing sediment to the pond.

Existing Vegetation, Habitat, and Water Quality Conditions

Vegetation in this location has not been disturbed to the extent that it has adjacent to Scannell Field since primary access is along the top of the slope in a grassed area. There are, however, nine separate pathways down the steep slope to another pathway at mid slope and, occasionally, along the water's edge. All nine have compacted, eroding soil that is deposited in the pond. As a relatively isolated area it

serves to provide habitat for small animals and birds, however, sediment from the uncontrolled pathways contributes negatively to the aquatic habitat. Any and all sediment that enters the water of Spy Pond continues to degrade the water quality.



Photograph 11: Steep Eroded Slope



Photograph 12: Numerous Foot Paths

Stormwater from the adjacent pavement in Wellington Street and Pond Lane Extension drains into a catch basin at the curb next to this segment of parkland. From there it is piped through a manhole directly into Spy Pond at the base of the slope. The 12-inch outfall is partially filled with sediment and water. The outfall is ill-defined due to the lack of an endwall and the surrounding vegetation that grown in obscuring it from view.



Photograph 13: Obscured 12-inch Stormwater Outfall

Area 4 – Spring Valley Street (Unstable)

Figure 7 – Area 4: Spring Valley Street



Circulation and Access

This component of the project was part of a conceptual green infrastructure retrofit developed by Chester Engineers in 2014 in conjunction with a stormwater grant sponsored by Mystic River Watershed Association (MyWRA) and implemented through Arlington's Public Works Department. The concept was designed to divert stormwater runoff from the Spring Valley Street into a cascading bioretention channel leading to a small treatment wetland and from there into Spy Pond. It is situated at the end of Spring Valley Street, accessible by vehicle or on foot. The area currently serves as a small boat launch facility for surrounding neighbors.



Photograph 14: Uncontrolled Stormwater Runoff



Photograph 15: Small Boat Launch Facility, Lower End of Spring Valley Street

Existing Vegetation, Habitat, and Water Quality Conditions

A recent rainfall event that produced high energy sheet flow across the paved boat launch area at the end Spring Valley Road undermined and overturned a 30-inch diameter poplar tree that served to stabilize the bank adjacent to Spy Pond. The upturned, root ball, approximately eight feet in diameter has created a large, eroding crater in the slope at the water's edge. The fallen tree extends out into the pond for approximately 80 feet, supported by broken limbs.



Photograph 16: Eroded Slope near Stormwater Outfall



Photograph 17: Eroded Slope at the Uprooted Tree



Photograph 18: Uprooted Tree

In addition to the fallen tree, there are a few small trees on the periphery of the site, however, extensive use as a boat launch facility has eliminated understory and ground plane vegetation with the exception of some scattered groundcover. The portion of the bank to the pond that is not affected by the overturned tree is vegetated, and relatively stable. Habitat value for upland species is minimal and sediment from the exposed and eroding soil negatively impacts both water quality and aquatic habitat.

Summary of Existing Shoreline Conditions

| Existing Shoreline Categorizations | | | |
|---|---|--|--|
| Area 1: Scannell Field | Area 2: Spy Pond Park | Area 3: Boys & Girls Club | Area 4: Spring Valley Street |
| Unstable <ul style="list-style-type: none"> • Loss of stabilizing vegetation • Compacted soils • Uncontrolled human use • Steep slope • Uncontrolled stormwater runoff | Marginally Stable <ul style="list-style-type: none"> • Scattered loss of vegetation • Compacted Soils • Uncontrolled human use | Unstable <ul style="list-style-type: none"> • Loss of stabilizing vegetation • Compacted soil • Uncontrolled human use • Steep slope | Unstable <ul style="list-style-type: none"> • Loss of stabilization • Steep slope • Uncontrolled stormwater runoff • Human use |

APPENDIX C
BOTANICAL SURVEY REPORT AND VPRS REPORT



24 October 2017

Richard Kirby
Senior Wetland Scientist
LEC Environmental Consultants, Inc.
100 Grove Street, Suite 302
Worcester, MA 01605

**RE: Rare Plant Species Study at Spy Pond
Arlington, Massachusetts**

Dear Rich:

In response to your request, site visits were conducted over two days in the first week of October 2017. Observations were conducted using meandering transects along the upland boundary of the shoreline and then repeated wading a linear path along the submerged shore. While the focus of these observations was specifically for *Cyperus engelmannii* and related or similar taxa, 65 species of vascular plants were noted spanning 21 families, including several invasive species (e.g., *Lythrum salicaria*, *Phragmites australis*, and *Polygonum cuspidatum*, among others).

A moderate number of individuals of the genus *Cyperus* were observed along sunny, relatively open stretch of sandy and/or muddy shoreline. The majority of these observations proved to be *C. strigosus*, while several appeared to be *C. engelmannii* and thus the focus of further investigation described herein. Other taxa within the Cyperaceae were also noted but these were not likely to be confused with the species of concern, e.g., *Cyperus bipartitus*, *Carex scoparia*, and *Carex vulpinoidea*. The *Cyperus* species in question occurred in isolated patches that were limited Area 2 "Spy Pond Park" only (Figure 1). The locations of population centers were georeferenced in the field using a Trimble Nomad handheld computer with Trimble R1 antennae which provided point accuracy <50cm. Note that no species of *Cyperus* were observed at Area 1 "Scannel Field", Area 3 "Boys and Girls Club", or Area 4 "Spring Valley Street".

Each study area had plant community similarities on some level, but due perhaps to their surrounding topography, orientation, or adjacent land uses, the specific composition of these communities differed at each. The Scannel Field site, for example had taller and denser canopy of red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), and willow (*Salix babylonica*) coupled with a steep embankment. Due to these features, the Scannel Field site had the least ground cover of the four, followed by the Boys and Girls Club site, which was quite similar in terms of features and plant community. Finally, the Spring Valley site was fairly disturbed due to the street drain culvert and what appeared to be a recent tree that toppled and impacted the shoreline. Figure 2 represents the prevailing conditions at each site.

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30 Pleasant Street, Andover, Massachusetts 01810
t: 617.240.2865 e: gregg.moore@unh.edu



Figure 1: Study Area map (source: LEC) showing each of the four foci of the botanical survey work (left) and observations of *Cyperus engelmannii* within Study Area 2 “Spy Pond Park” (right).

At each *Cyperus* observation, the inflorescence and stem were closely examined in the field. Portions of individual florets were removed and flower parts measured. In some cases, sandy or muddy sediment near the base of the stem was lightly exhumed to assess stem thickness and root/storage structures (if present). As detailed in the Survey protocol, the goal was to distinguish *Cyperus engelmannii* from *C. strigosus* or *C. odoratus*. In all but a few cases, the floral scales appeared to overlap when viewed with a 10x loupe or magnified with a 40x dissection scope (Figure 3) and stem bases were stiff and swollen suggesting that a determination of *C. engelmannii* was unlikely. In fewer cases, observations of the floral scale arrangement, position, and length were indicative of *C. engelmannii*. Two plants were collected in their entirety for additional observations using a dissecting scope back at the lab, as were portion of the inflorescence of each plant observed. A total of 44 individual plants were examined. After reviewing the data, the majority appeared to be *C. strigosus*, while 8-10 appear to be *C. engelmannii*. These determinations are based on 1) the presence of overlapping or non-overlapping floral scales (Figure 3), 2) average scale length, 3) stiff stems, particularly at the base, and 4) presence of nutrient storing structures at or under the sediment surface. The floral characteristics were more definitive and less invasive to examine than root/rhizome structures and were the primary determining factor in differentiation to the species level. In all cases, observations occurred in disturbed areas beneath an open canopy. The most dense grouping of plants occurred at a muddy, shallowly sloped shore that appears regularly mowed, just north of the Linwood Street *cul de sac*, where it grows with *C. strigosus* and *Ludwigia palustris*. The other two observations are among *C. strigosus* in sandy soils, again, under an open canopy in a relatively disturbed portion of shoreline.



Figure 2: Clockwise from top left, existing conditions at Area 1 “Scannel Field”, Area 2 “Spy Pond Park”, Area 3 “Boys and Girls Club”, and Area 4 “Spring Valley Street”.



Figure 3: Comparison of *C. engelmannii* and *C. strigosus* at different magnifications from specimen collected in the field at the Spy Pond site, noting key characteristics between the two.



While the examination of plants observed suggests that *C. engelmanni* does not exhibit a dominant presence at the sites studied (Figure 1), it should be noted that it is present at Area 2, and suitable habitat exists throughout much the non-hardened shoreline habitats of Spy Pond. Therefore, it is possible that this rare species is also present outside of the immediate study areas and may be observed in greater abundance under different environmental conditions in the past or future. That said, the assessment reported herein was thorough and conducted at an appropriate time of year to make a positive determination of presence and extent of *C. engelmanni*. Therefore, I am confident that these findings accurately represent present-day conditions. I remain happy to conduct additional surveys as needed.

Should you have any questions or require additional information, please don't hesitate to contact me at gregg.moore@unh.edu.

Sincerely,



Gregg E. Moore, Ph.D.
Wetland Ecologist

NHESP PLANT OBSERVATION REPORT

P4926

PLANT IDENTIFICATION

Common Name:

Engelmann's Flatsedge

Scientific Name:

Cyperus engelmannii

Conservation Status:

Threatened

EO#:

Not Answered

Town:

Arlington

Site Name:

Spy Pond

Are you confident of this species ID?

Yes

Explanation: Not Answered

Description of the diagnostic characteristics upon which the ID was based (including how distinguished from congeners or look-alikes)

Floral scale characteristics, sclae length, stem stiffness, and nutrient storage structures near sediment surface. See report attached.

Reference: Not Answered

Was the organism's species identification made by someone other than the observer?

No

Photographs or slides taken?

Yes

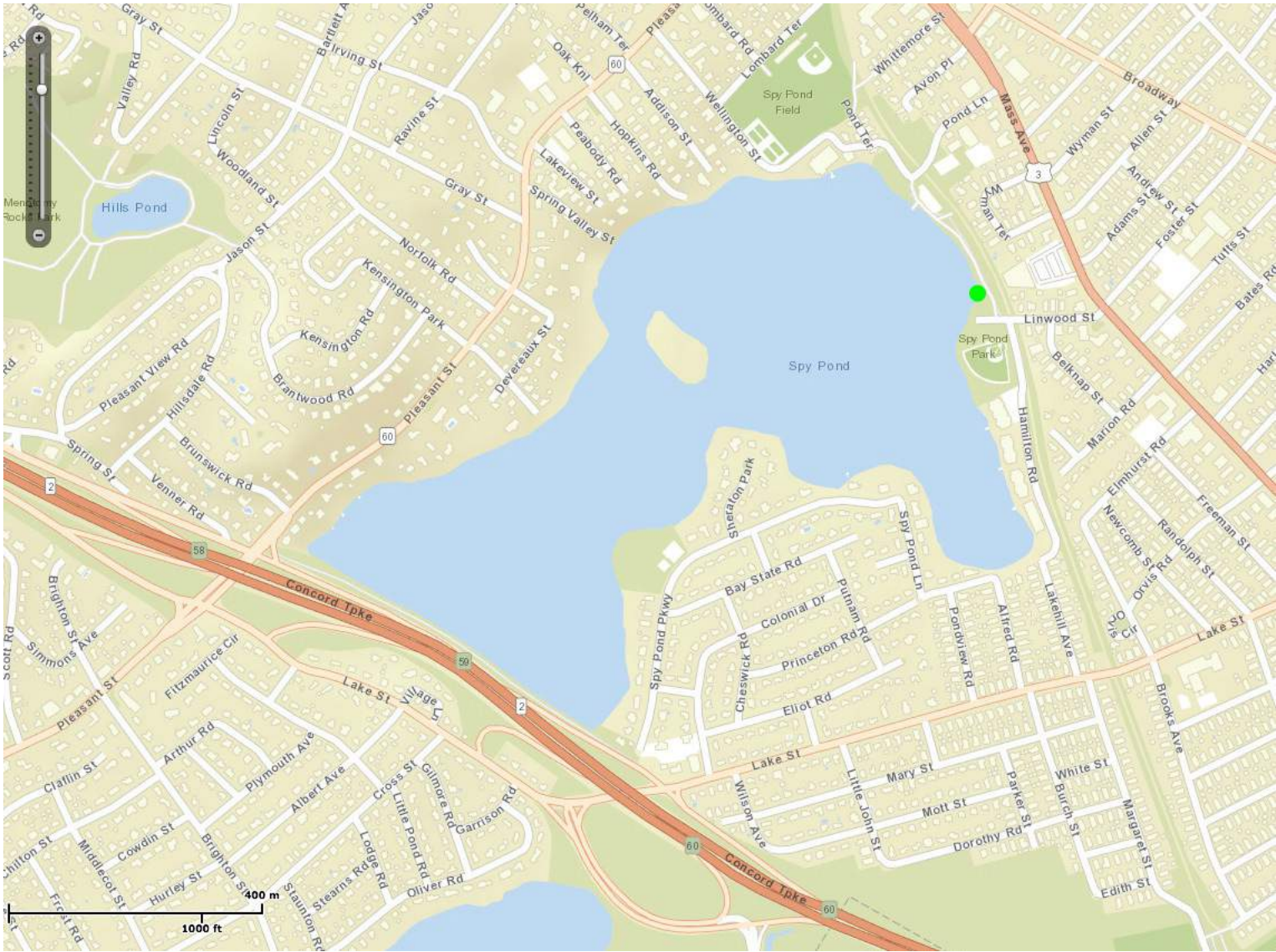
Was a specimen collected and curated for deposition in a biological research collection?

No, repository: Not Answered, collection #: Not Answered

LOCATIONS

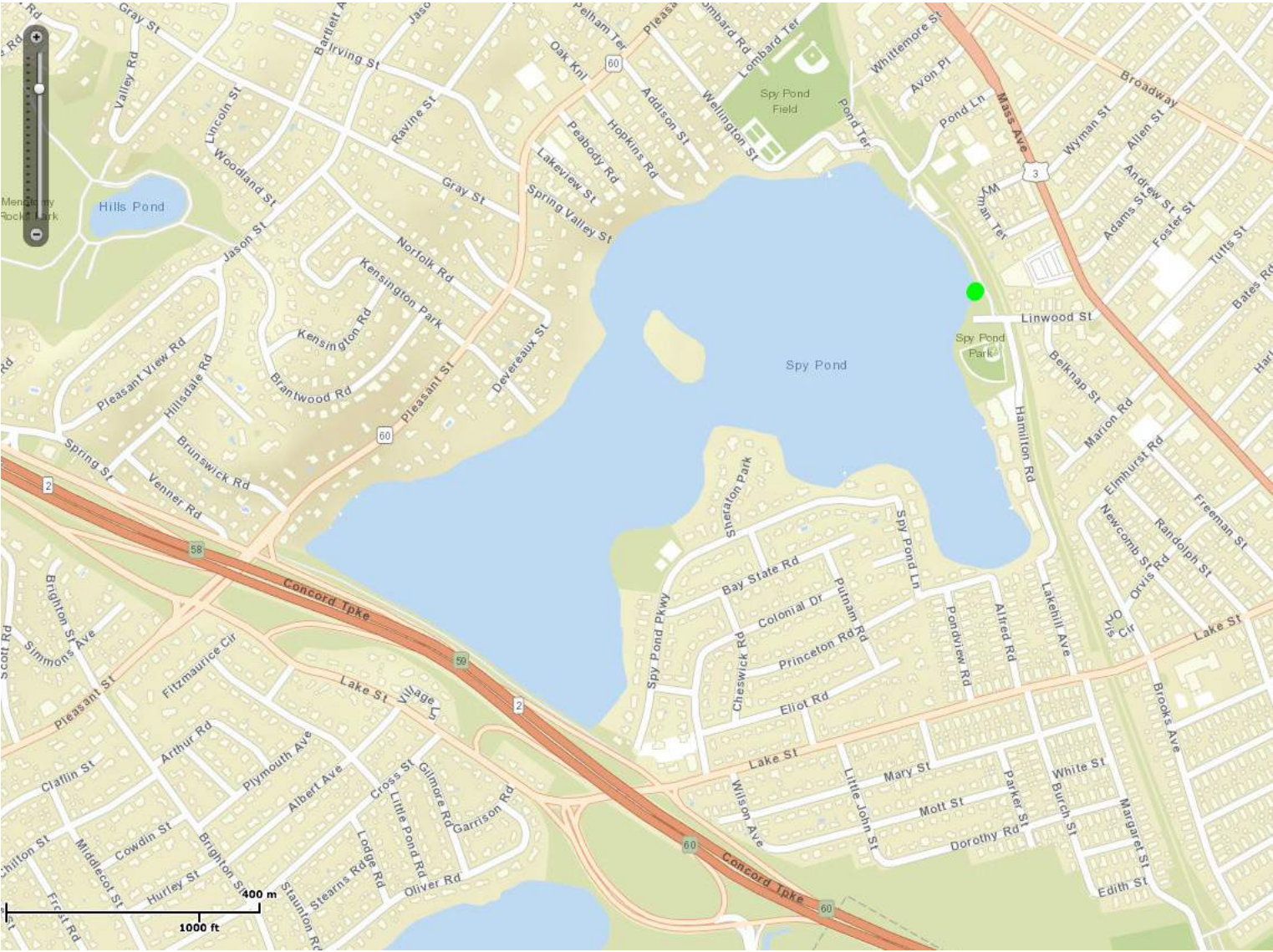
Directions:
Access to site from Massachusetts Avenue.

Location Name: Location #1
Location Type: Point
Coordinates(x,y): -71.149473,42.409706
Coordinate Source: GPS Unit
Other Coordinate Source: Not Answered
Accuracy: <1m



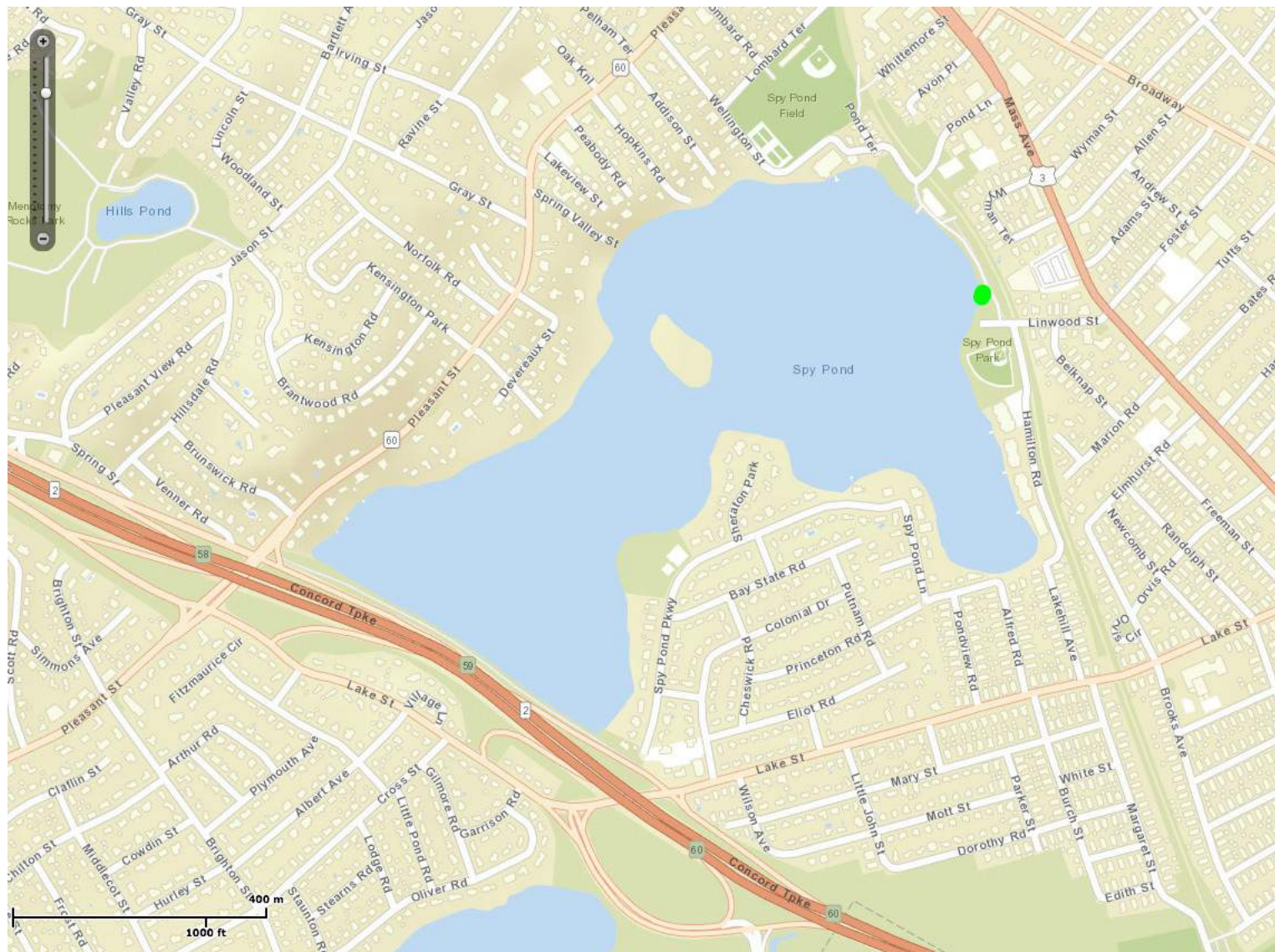
| Date | Comments | Photo |
|---------------|--|-------|
| October, 2017 | Several individuals, co-occurring with <i>Lugwigia palustris</i> | |

Location Name: Location #2
Location Type: Point
Coordinates(x,y): -71.149455,42.409737
Coordinate Source: GPS Unit
Other Coordinate Source: Not Answered
Accuracy: <1m



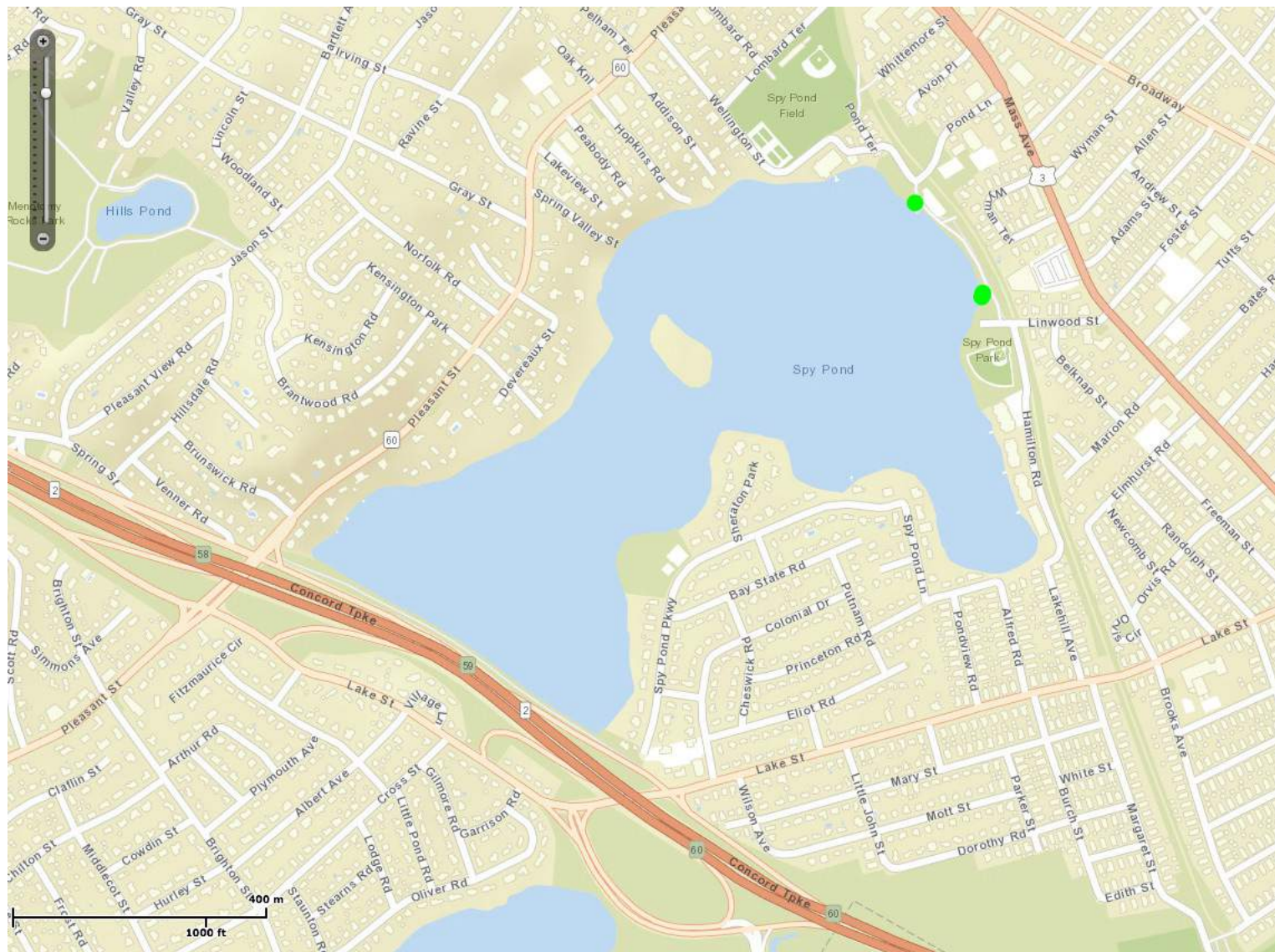
| Date | Comments | Photo |
|---------------|--|-------|
| October, 2017 | Several individuals, amongst muddy substrate disturbed by mowing. Plants rather short, <15cm, flowering (evidence of frequent mowing disturbance?) | |

Location Name: Location #3
Location Type: Point
Coordinates(x,y): -71.149453,42.409765
Coordinate Source: GPS Unit
Other Coordinate Source: Not Answered
Accuracy: <1m



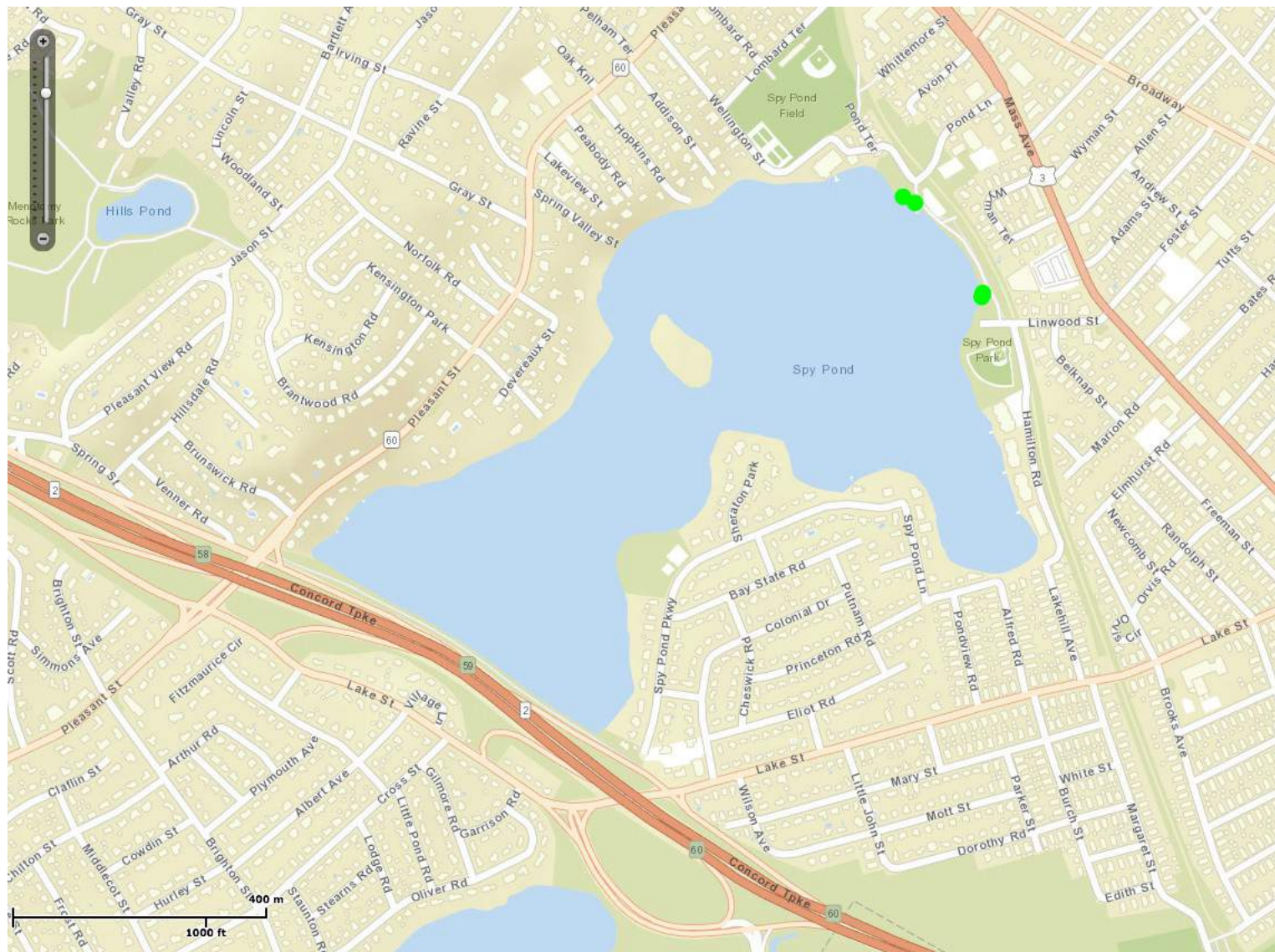
| Date | Comments | Photo |
|---------------|--|-------|
| October, 2017 | Similar to Observation 2, but separated from others by large boulders. Muddy substrate. Evidence of disturbance from mowing. | |

Location Name: Location #4
Location Type: Point
Coordinates(x,y): -71.150757,42.411042
Coordinate Source: GPS Unit
Other Coordinate Source: Not Answered
Accuracy: <1m



| Date | Comments | Photo |
|---------------|---|-------|
| October, 2017 | Two individuals, among/co-occurring with <i>C. strigosus</i> in sandy soil. | |

Location Name: Location #5
Location Type: Point
Coordinates(x,y): -71.150985,42.411129
Coordinate Source: GPS Unit
Other Coordinate Source: Not Answered
Accuracy: <1m



| Date | Comments | Photo |
|---------------|---|-------|
| October, 2017 | One individual. Among <i>C. strigosus</i> . Sandy soil. | |

SITE INFO

Describe the habitat, including the natural community and associated species:

Not Answered

Habitat Descriptors:

Landform/Topography:

Shore / Lake / Stream

Soil Moisture Regime:

Wet

Aspect:

Not Answered

W

Slope:

Not Answered

Flat

Light:

Open

Elevation:

0

Soil Type(s):

Not Answered

Surficial Geology:

Not Answered

Bedrock Geology:

Not Answered

List invasive species present and describe their perceived threat level:

Phragmites and Lythrum salicaria. moderate threat.

Please describe other observed threats to the population at this site:

Recreational use, landsacping/mowing.

Managed Area Name (if applicable):

Not Answered

Contact Person (name/tel#/email), if known:

Not Answered

Property Owners

| | | | | | | |
|-------------|----------------|-------------|--------------|------------|---------------|----------------|
| <i>Name</i> | <i>Address</i> | <i>Town</i> | <i>State</i> | <i>Zip</i> | <i>Parcel</i> | <i>Comment</i> |
|-------------|----------------|-------------|--------------|------------|---------------|----------------|

POPULATION INFO

Did your survey encompass the entire population extent, if known?

Yes

Approximate area occupied by the population:

2 meters squared

Total number of 'genets' (i.e., genetically distinct, or clearly separate individuals):

10, Estimate

Total number of 'ramets' (i.e., stems or shoots arising from clones):

Not Answered, Estimate

Please indicate the # or % in each age class and condition, if known, or just check all that apply: (Type: Count)

| <i>Age Classes Present</i> | <i>Reproductive Condition of the Population</i> | |
|------------------------------------|---|------------------------------|
| Not Answered Seedlings | Not Answered Vegetative | Not Answered Mature fruit |
| Not Answered Immature Plants | Not Answered In bud | Not Answered Seed dispersing |
| 10 Mature Plants | 10 In flower | Not Answered Senescent |
| Not Answered Plants of unknown age | Not Answered Immature fruit | Not Answered Dormant |

How would you characterize the vigor of this population?

fair

Have you observed this species at this site in previous years?

No, Details: Not Answered

OTHER OBSERVATION INFO

Was the observation associated with a formal survey?

No

Is this observation associated with a Collection Permit?

Yes, Collection Permit #: on file

What are your recommendations for future inventory, monitoring, research, and/or management?

Not Answered

What are your protection recommendations?

Not Answered

Is this observation associated with a NHESP review file?

Yes , Tracking #: on file

List the names of other observers(and qualifications):

Gregg E. Moore, Ph.D. Associate Research Professor at UNH, dept of Biology

Observer Information:

First Name: Gregg

Last Name: Moore

Address 1: Jackson Estuarine Laboratory

Address 2: 85 Adams Point Road

Town: Durham

State: NH

Zip: 03824

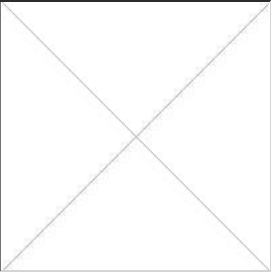
Telephone: 6038625138

Email: gregg.goore@unh.edu

OBSERVER COMMENTS

| <i>Observation Date</i> | <i>Comment</i> |
|-------------------------|----------------|
|-------------------------|----------------|

PHOTOS/DOCUMENTS

| <i>Title</i> | <i>Filename</i> | <i>Type</i> | <i>Description</i> | <i>Thumbnail</i> |
|---------------------------|---------------------------|-------------|--------------------|--|
| Final Report_Spy Pond.pdf | Final Report_Spy Pond.pdf | Document | |  |

APPENDIX D
CORRESPONDENCE WITH NHESP

Holmes, Hilary

From: Richard Kirby <RKirby@lecenvironmental.com>
Sent: Monday, September 25, 2017 2:50 PM
To: Marold, Misty-Anne (FWE)
Cc: Holt, Emily (FWE); Holmes, Hilary; Moore, Gregg; Brian Madden
Subject: RE: Spy Pond Botanical Survey

Thank you Misty-Anne, and thanks for the thoughtful phone call earlier today.
We will keep you posted per our discussions.
Team, see below.

Richard A. Kirby
Senior Wetland Scientist
LEC Environmental Consultants, Inc.
508-813-4129 cell
www.lecenvironmental.com

From: Marold, Misty-Anne (FWE) [mailto:misty-anne.marold@MassMail.State.MA.US]
Sent: Monday, September 25, 2017 2:47 PM
To: Richard Kirby <RKirby@lecenvironmental.com>
Cc: Holt, Emily (FWE) <emily.holt@state.ma.us>
Subject: RE: Spy Pond Botanical Survey

RE: NHESP 09-26949, Spy Pond Botanical Survey

Richard,

The Division has received and reviewed the botanical survey protocol entitled "Botanical Survey Protocol Engelmann's Umbrella Sedge (*Cyperus engelmanni*) Spy Pond Arlington, Massachusetts" dated 9/11/2017 (received via email 9/13/17). We approve the botanical survey to be conducted by Dr. Gregg E. Moore for documentation of the presence of *C. engelmanni* within the target areas. It may still be possible to identify the plants in 2017, but if not, then surveys can be conducted in 2018 without re-filing.

As discussed, it is important for the team to identify the source(s) of erosion at each location and ensure that any proposed project focus on those causative factors. The survey will not be conclusive for the absence of *C. engelmanni*. Dr. Moore should also map areas containing suitable and unsuitable habitats and determine the role of upslope erosion on degradation or maintenance of said habitats. In all areas where plants are found to be present, care should be taken to extend the survey area to adjacent suitable habitats that may offer reconfiguration opportunities for the town project and would help avoid impacts to the plants.

Best, Misty-Anne

Misty-Anne R. Marold
Senior Endangered Species Review Biologist
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581

From: Richard Kirby [<mailto:RKirby@lecenvironmental.com>]
Sent: Wednesday, September 20, 2017 9:53 AM
To: Marold, Misty-Anne (FWE)
Subject: Spy Pond Botanical Survey

Hello Misty-Anne:

I left you a message yesterday returning your call regarding the Spy Pond project and LEC's request for Protocol approval.

While the project has yet to be designed, attached is the RFP to give you a better sense of what is proposed. Please let me know if you require any additional information for approval.

Thanks.

Rich

Richard A. Kirby
Senior Wetland Scientist
LEC Environmental Consultants, Inc.
508-813-4129 cell
www.lecenvironmental.com

Holmes, Hilary

From: Richard Kirby <RKirby@lecenvironmental.com>
Sent: Friday, October 27, 2017 1:08 PM
To: Marold, Misty-Anne (FWE)
Cc: Holt, Emily (FWE); Moore, Gregg; Holmes, Hilary; Brian Madden
Subject: RE: Spy Pond Botanical Survey
Attachments: FINAL Botanical Survey Report.pdf

Misty-Anne and Emily,

Please find attached Dr. Moore's Botanical Survey Report for your review. Hatch and LEC will be in touch next week to schedule a site visit with you to review and discuss potential shore-line stabilization and restoration measures intended for the subject portions of Spy Pond and associated MESA permitting considerations. Let us know if you have any questions in the meantime.

Thanks,

Rich

Richard A. Kirby
Senior Wetland Scientist
LEC Environmental Consultants, Inc.
508-813-4129 cell
www.lecenvironmental.com

From: Marold, Misty-Anne (FWE) [mailto:misty-anne.marold@MassMail.State.MA.US]
Sent: Tuesday, September 26, 2017 9:07 AM
To: Richard Kirby <RKirby@lecenvironmental.com>
Cc: Holt, Emily (FWE) <emily.holt@state.ma.us>
Subject: RE: Spy Pond Botanical Survey

Richard,

Have a survey this season will be helpful. For example, if a water access feature leads directly to a hot-spot, it will help focus on re-design. So, on the whole, I think the survey is important as it will help guide alternatives.

Misty-Anne

Misty-Anne R. Marold
Senior Endangered Species Review Biologist
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6356 | f: (508) 389-7890
mass.gov/masswildlife | facebook.com/masswildlife

From: Richard Kirby [mailto:RKirby@lecenvironmental.com]
Sent: Monday, September 25, 2017 4:09 PM
To: Marold, Misty-Anne (FWE)
Cc: Holt, Emily (FWE)
Subject: RE: Spy Pond Botanical Survey

Misty-Anne.

I spoke with my contact at Hatch, and they anticipate a fall 2018 start date. Would you recommend a 2018 botanical survey to locate individual plants for relocation prior to work? Or do you think a survey this year is also prudent. I suppose a condition of approval will be to ID and relocate plants, so Dr. Moore would likely be out at the site anyway next September.

Richard A. Kirby
Senior Wetland Scientist
LEC Environmental Consultants, Inc.
508-813-4129 cell
www.lecenvironmental.com

From: Marold, Misty-Anne (FWE) [<mailto:misty-anne.marold@MassMail.State.MA.US>]
Sent: Monday, September 25, 2017 2:47 PM
To: Richard Kirby <RKirby@lecenvironmental.com>
Cc: Holt, Emily (FWE) <emily.holt@state.ma.us>
Subject: RE: Spy Pond Botanical Survey

RE: NHESP 09-26949, Spy Pond Botanical Survey

Richard,

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As discussed, it is important for the team to identify the source(s) of erosion at each location and ensure that any proposed project focus on those causative factors. The survey will not be conclusive for the absence of *C. engelmanni*. Dr. Moore should also map areas containing suitable and unsuitable habitats and determine the role of upslope erosion on degradation or maintenance of said habitats. In all areas where plants are found to be present, care should be taken to extend the survey area to adjacent suitable habitats that may offer reconfiguration opportunities for the town project and would help avoid impacts to the plants.

Best, Misty-Anne

Misty-Anne R. Marold
Senior Endangered Species Review Biologist
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6356 | f: (508) 389-7890
mass.gov/masswildlife | facebook.com/masswildlife

From: Richard Kirby [<mailto:RKirby@lecenvironmental.com>]
Sent: Wednesday, September 20, 2017 9:53 AM
To: Marold, Misty-Anne (FWE)
Subject: Spy Pond Botanical Survey

Hello Misty-Anne:

I left you a message yesterday returning your call regarding the Spy Pond project and LEC's request for Protocol approval.

While the project has yet to be designed, attached is the RFP to give you a better sense of what is proposed. Please let me know if you require any additional information for approval.

Thanks.

Rich

Richard A. Kirby

Senior Wetland Scientist

LEC Environmental Consultants, Inc.

508-813-4129 cell

www.lecenvironmental.com

Holmes, Hilary

From: Holmes, Hilary
Sent: Thursday, November 30, 2017 5:47 PM
To: Marold, Misty-Anne (FWE)
Cc: Richard Kirby; Moore, Gregg; Bitsko, Duke; Lela Shepherd; Johnson, Ginna; karro.frost@state.ma.us
Subject: Spy Pond - Site walk follow-up

Hi Misty-Anne,

I wanted to thank you and Karro Frost for taking the time to meet with our team out at the Spy Pond project site. The discussion was helpful and will inform how we proceed with the design and permitting. Below I have provided a summary of the main items we talked about.

1. Importance for the Hatch team to identify the sources of erosion at each location and ensure that proposed improvements focus on those causative factors. Some of the sources of erosion for Spy Pond Park that were discussed included human use, the existing boat ramp, North Beach access ramp, and wave action.
2. Past GPS locations for sedge – NHESP to provide information from previous botanical surveys. Hatch team to review locations and elevations to inform design.
3. Take a strategic approach to shoreline stabilization
 - a. For areas next to known rare sedge habitat (in general sunny with gentler slope) Hatch team to look into other alternatives to coir fascines/regrading that will not alter habitat and look at strategic locations for stabilization. Some of the locations discussed included stabilizing the shoreline edge where it meets the boat ramp, regrading at the existing stormwater outfall at the stone wall, and repositioning boulders to angle back at the North Beach access.
 - b. For the South Beach, an area known as rare sedge habitat, Hatch team to consider less mowing or no mowing to improve habitat
 - c. Areas that were steep and shady were not considered to be providing habitat for the rare sedge. This included some of the steeper shoreline areas within the Park, Scannell Field, Boys & Girls Club area, and Spring Valley Street. Hatch team to look at other options in addition to coir fascines/regrading.
4. Stone base for coir fascines – Hatch will revisit whether or not the stone base is necessary. The stone base is typically used in locations with silty sediment. Hatch will confirm material prior to final design.

Please let us know if you have any additional feedback.

Thank you,
Hilary

Hilary A. Holmes, P.E., LEED AP BD+C
Senior Civil Engineer

Tel: 978 224 3131
Cell: 302 388 3850
27 Congress Street, Suite 508
Salem, MA 01970



Holmes, Hilary

From: Bitsko, Duke
Sent: Tuesday, March 27, 2018 3:19 PM
To: misty-anne.marold@state.ma.us
Cc: Holmes, Hilary; Bitsko, Duke
Subject: Arlington Spy Pond Shoreline Restoration Project
Attachments: Sketch_Boat_Ramp_Sedge_3.27.2018.pdf

Misty-Anne,

I will call to find out when you might be free to discuss some options at Spy Pond in Arlington. Attached is a photo of one of the three areas where the Engelmann's sedge was field located, and sketch section.

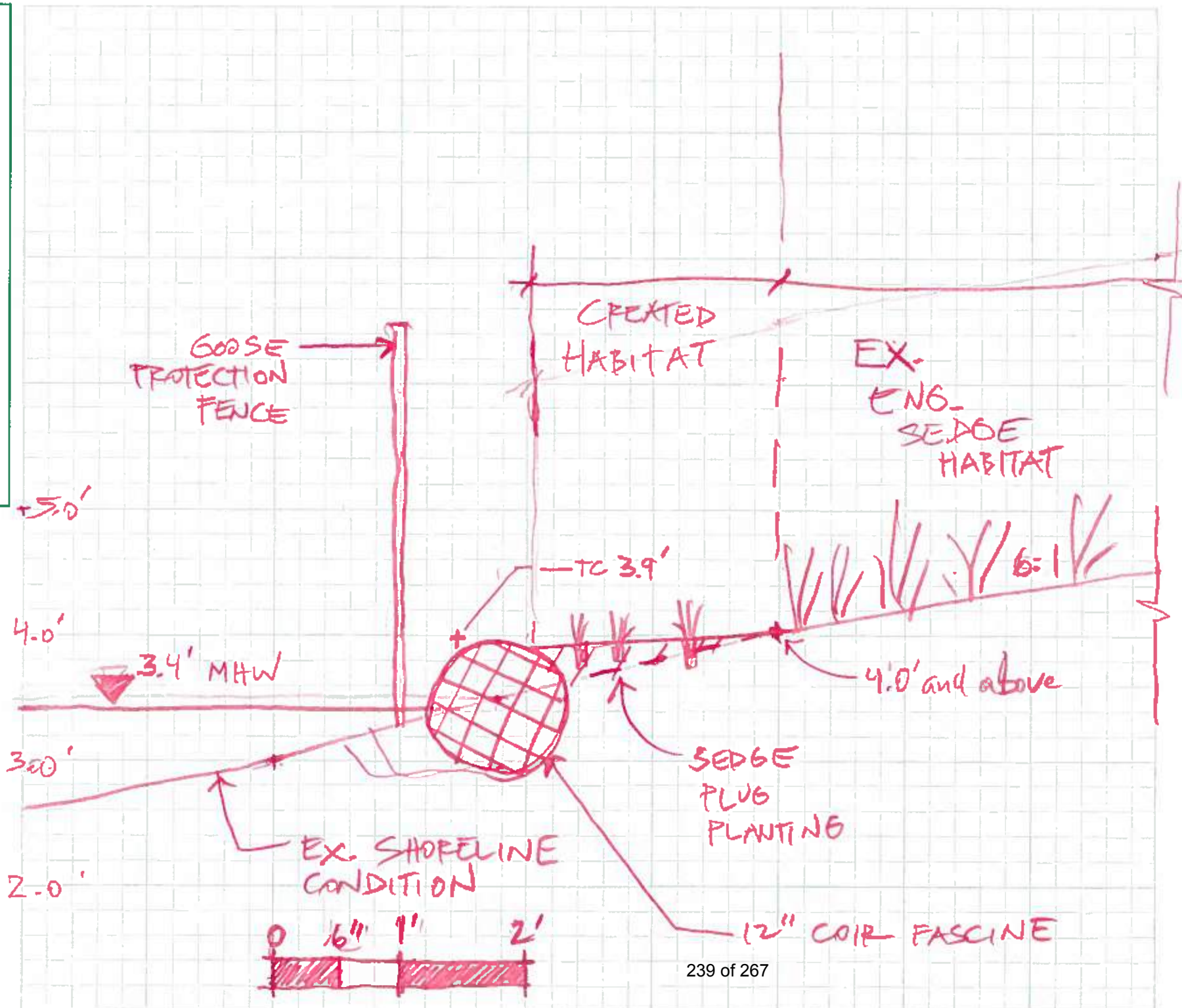
Best, Duke

Duke Bitsko, RLA

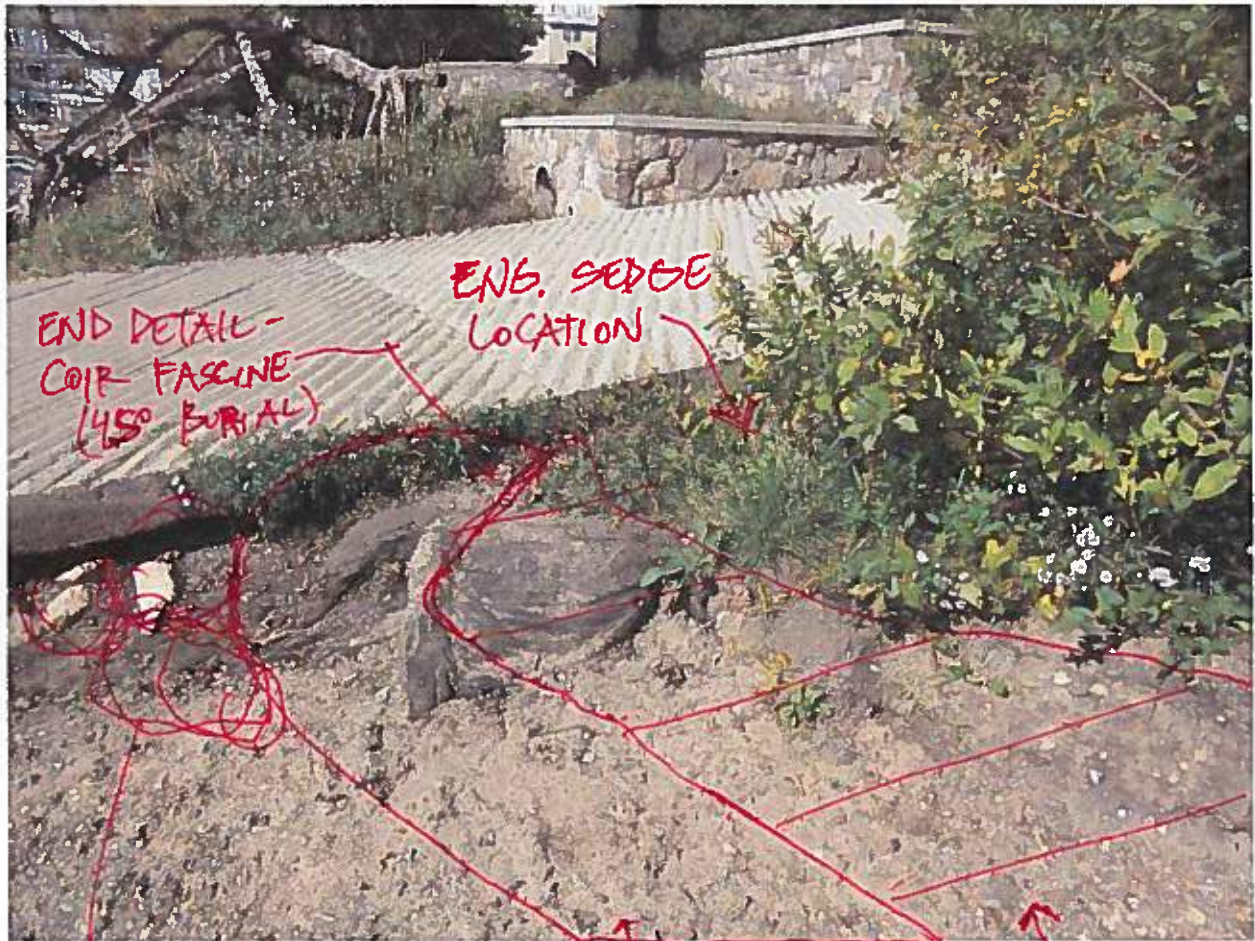
Director, Interdisciplinary Design

Tel: 978 224 3123 C: 617 721 3292
27 Congress Street, Suite 508
Salem, MA 01970





ARLINGTON SPY POND PROJECT



South of the Boat Ramp – Known sedge habitat

12" Coir Fascine

CREATED
WETLAND
SHELF

HAND-PLACED
RIP RAP

Holmes, Hilary

From: Bitsko, Duke
Sent: Monday, May 21, 2018 12:45 PM
To: misty-anne.marold@state.ma.us
Cc: Holmes, Hilary; Bitsko, Duke
Subject: RE: Arlington Spy Pond Shoreline Restoration Project
Attachments: Photo_Overlook_location.pdf; overlook_plan.pdf

Misty-Anne,

The previous sketch plan I sent is still valid. The goal is to not propose any work other than supplemental planting in the riparian zone associated with the E. sedge.

I have attached a plan of the only other treatment along the Spy Pond Park shoreline: a small timber overlook on helical pilings. This is located in the area where there is the steepest embankment (12-18") within the park, and next to South Beach.

The overlook will be constructed in the area shown in the attached photograph of the boulder/slab water access point. The boulders and slabs will be removed, the shoreline re-graded and planted, and the overlook constructed above the restored shoreline. It is the Town of Arlington's hope that the construction of the overlook will minimize circulation along the existing shoreline in this location.

At your convenience I would like to discuss developing a proactive strategy for the Town/contractor to sequence construction activities that will protect the riparian zone habitat as well as the South Beach area (long-term).

Please call or email with any questions/comments.

Best, Duke

From: Bitsko, Duke
Sent: Tuesday, March 27, 2018 3:19 PM
To: misty-anne.marold@state.ma.us
Cc: Holmes, Hilary <hilary.holmes@hatch.com>; Bitsko, Duke <duke.bitsko@hatch.com>
Subject: Arlington Spy Pond Shoreline Restoration Project

Misty-Anne,

I will call to find out when you might be free to discuss some options at Spy Pond in Arlington. Attached is a photo of one of the three areas where the Engelmann's sedge was field located, and sketch section.

Best, Duke

Duke Bitsko, RLA
Director, Interdisciplinary Design

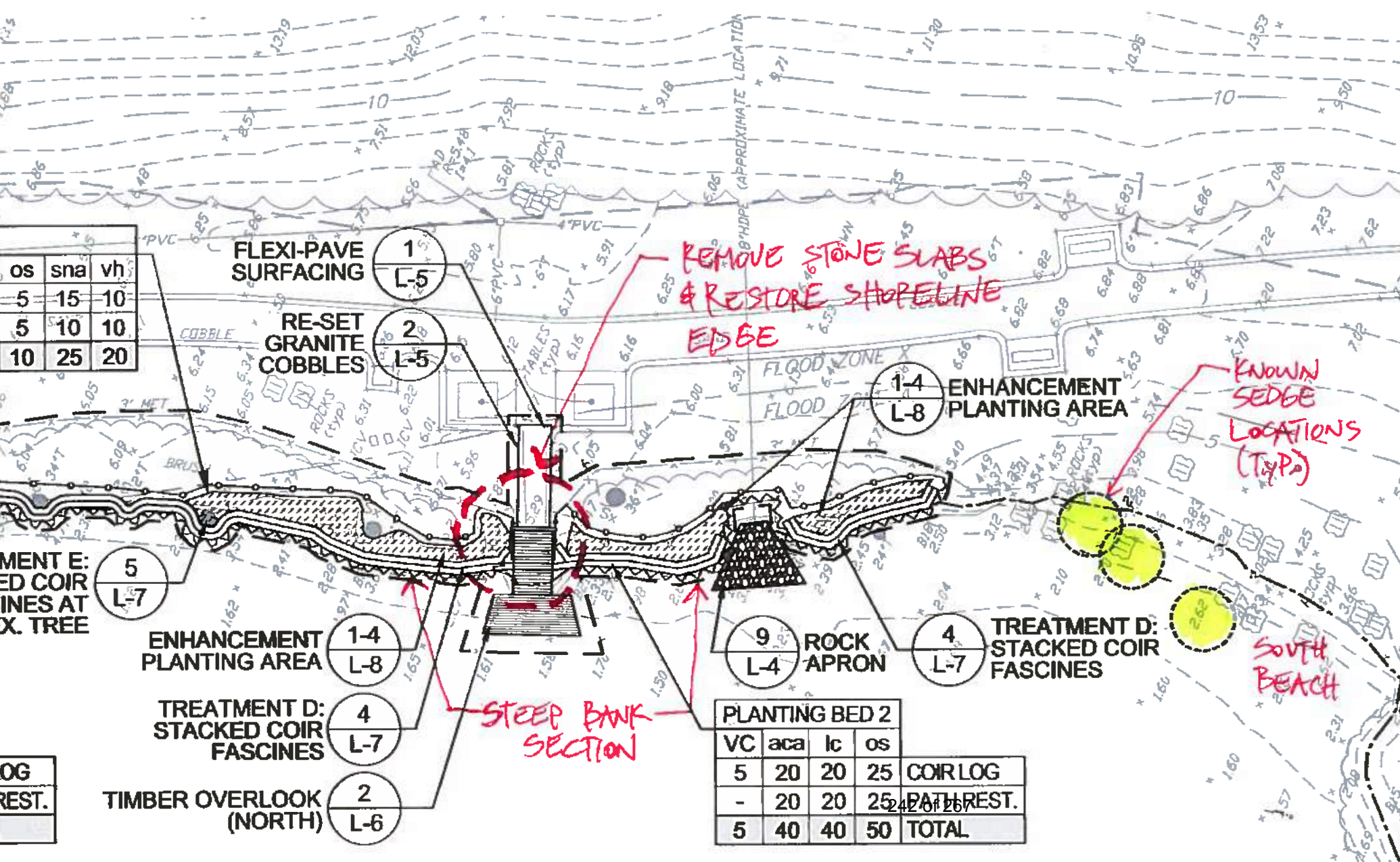
Tel: 978 224 3123 C: 617 721 3292
27 Congress Street, Suite 508
Salem, MA 01970

Y POND
ELEVATION
9/8

| os | sna | vh |
|----|-----|----|
| 5 | 15 | 10 |
| 5 | 10 | 10 |
| 10 | 25 | 20 |

MENT E:
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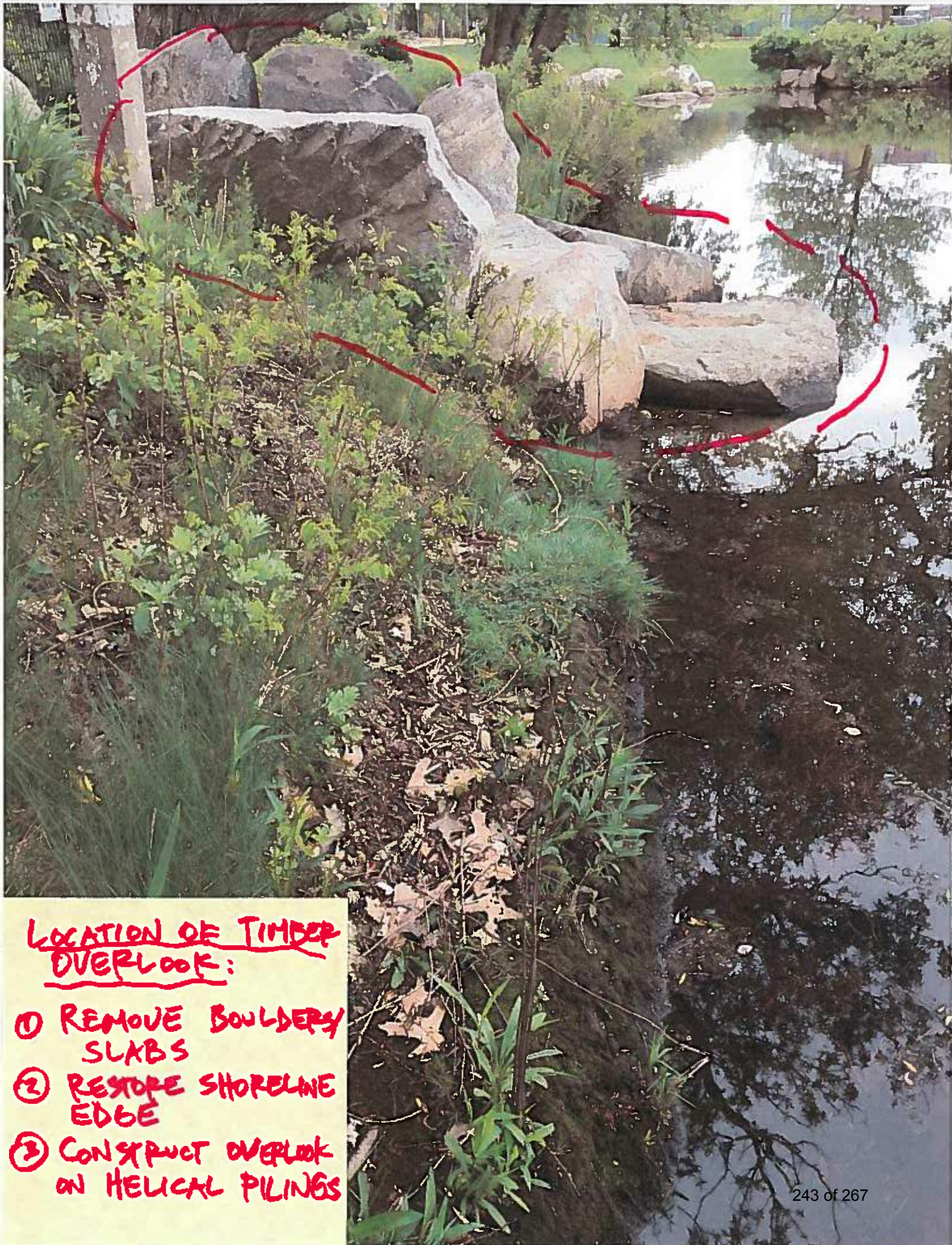
REMOVE STONE SLABS
& RESTORE SHOULDER
EDGE

KNOWN
SEDE
LOCATIONS
(TYP)

SOUTH
BEACH

| PLANTING BED 2 | | | | |
|----------------|-----|----|----|------------|
| VC | aca | lc | os | |
| 5 | 20 | 20 | 25 | COIR LOG |
| - | 20 | 20 | 25 | PATH REST. |
| 5 | 40 | 40 | 50 | TOTAL |

TIMBER OVERLOOK
(NORTH)



LOCATION OF TIMBER
OVERLOOK:

- ① REMOVE BOULDERS
SLABS
- ② RESTORE SHORELINE
EDGE
- ③ CONSTRUCT OVERLOOK
ON HELICAL PILINGS

Holmes, Hilary

From: Bitsko, Duke
Sent: Monday, June 11, 2018 9:28 AM
To: Holmes, Hilary; Lela Shepherd
Subject: FW: Spy Pond

Please see email below from Karro.

Our meeting went very well on Friday. Misty-Anne was sick and did not attend. I will follow up this morning with a summary. Thanks, Duke

From: Frost, Karro (FWE) [mailto:karro.frost@state.ma.us]
Sent: Friday, June 8, 2018 4:58 PM
To: Bitsko, Duke <duke.bitsko@hatch.com>
Cc: Marold, Misty-Anne (FWE) <misty-anne.marold@state.ma.us>; Leddick, Jesse (FWE) <jesse.leddick@state.ma.us>
Subject: Spy Pond

Hi Duke,

I'm glad that Jesse Leddick was able to sit in for Misty-Anne today. It was good to meet you and discuss the project. Thank you for coming.

I have looked at our data points in the vicinity of your project and noticed two things:

First, we never received a VPRS report from Greg Moore. We need that in order for his information to go into our database. Please ask Greg to submit that as soon as possible.

Second, the points that we do have are approximately in the same location as those shown on your plan. Obviously, I can't compare really since I don't have the points from Greg but no plants have ever been recorded in our database along the steep section of bank. Once Misty-Anne is back next week, I'm sure she will be in touch.

Karro

Karro Frost
Plant Restoration Biologist
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
p: [508.389.6390](tel:508.389.6390) | cell: [413.531.5745](tel:413.531.5745) | e: Karro.Frost@state.ma.us
mass.gov/masswildlife | facebook.com/masswildlife

Holmes, Hilary

From: Bitsko, Duke
Sent: Wednesday, June 13, 2018 3:29 PM
To: Marold, Misty-Anne (FWE); Leddick, Jesse (FWE); Frost, Karro (FWE)
Cc: Holmes, Hilary; Lela Shepherd
Subject: RE: Arlington Spy Pond Project and Engelmann's sedge strategy for protection
Attachments: SPP_Sedge_alt_plan.pdf; SPP_sedge_alt_section.pdf

Misty-Anne, Karro, and Jesse,

Please see attached sketch plan and section which will replace Treatment C (Detail 3/L-7) on our previous plan set submission. Ideally we would be re-using the granite boulders removed from one of the existing overlooks to:

1. Reduce foot traffic
2. protect the existing seedbank in the lower, shallow zones
3. reduce wave action

Let us know if you have any questions or comments. Thanks, Duke.

From: Bitsko, Duke
Sent: Tuesday, June 12, 2018 5:52 PM
To: Marold, Misty-Anne (FWE) <misty-anne.marold@state.ma.us>; Leddick, Jesse (FWE) <jesse.leddick@state.ma.us>; Frost, Karro (FWE) <karro.frost@state.ma.us>
Cc: Holmes, Hilary <hilary.holmes@hatch.com>; Bitsko, Duke <duke.bitsko@hatch.com>; Lela Shepherd <lshepherd@town.arlington.ma.us>
Subject: Arlington Spy Pond Project and Engelmann's sedge strategy for protection

Karro and Jesse,

Thanks to your group for taking the time last Friday to meet and discuss the Arlington Spy Pond project, especially given the fact I did not see Misty-Anne's email! I really enjoyed your net-zero building, educational signage, 4-trout stream, and meadow habitat.

Below please find a summary of our meeting last Friday, June 8th. Please let me know if I missed anything or need to provide additional clarification.

Hatch (Duke) provided an agenda and an overview of shoreline stabilization experience, existing project area, and proposed approach within Spy Pond Park (SPP). He also discussed an adjacent shoreline restoration project that constructed a wetland shelf and coir fascine breakwater that appears to have never taken hold.

NHESP comments:

1. Most concerned with shallow slope areas over steeper areas for sedge habitat; in SPP these areas include areas of known Engelmann's sedge identification, adjacent to concrete boat ramp, North Beach, and South Beach; these areas are slightly more protected as they are above the MHW mark of 3.4' elevation and protected from foot traffic as they are abutting hard structures
2. Avoid disturbance in observed E. sedge locations

3. Not concerned in steeper shoreline areas within SPP, especially those areas that are heavily shaded
4. Does not like Detail 3/L-7: Coir Fascine Treatment at Sedge Habitat, for the following reasons:
 - Filling of soil above existing seed bank not recommended
 - Bringing off-site soil may bring additional unwanted plant species
5. Construction Staging – preference for staging and access for main parking area and concrete boat ramp; not South Beach due to presence of favorable sedge habitat
6. Construction Schedule (Spy Pond Park) – preference for Fall 2019, due to possibility of E. sedge growth during spring if pond level is drawn down for construction
7. Transplanting Englemann’s sedge – not recommended as sedge is an annual and don’t want to impact existing seed bank
8. New Plantings –
 - favor native, low-growing, non-aggressive plant species
 - review feasibility for NEWFS to collect seed and germinate off-season
9. Proposed Overlook –
 - not opposed to location or impact; steeper shoreline not a favorable habitat for E. sedge
 - controlled access to water is favorable
10. Future Town Crew Dock and Access Path –
 - not opposed to location or impact
 - maximize opening of gangway decking for sunlight, as practicable
 - look at (existing) permanent fencing option to deter users from accessing shoreline adjacent to gangway

Next Steps:

11. NHESP to provide historical documentation of E. sedge at Spy Pond
12. Hatch to provide alternative solution to protect existing sedge areas by COB Tuesday so that NHESP can provide feedback prior to the NOI submittal.

As discussed at the end of our meeting, I have prepared a sketch plan and section identifying a solution to provide additional protection of the known sedge areas while avoiding disturbance within favorable E. sedge habitat. The sketch plans are currently being reviewed by the Town, and I will forward to you as soon as they have provided feedback.

Thanks, Duke

Duke Bitsko, PLA
Director, Interdisciplinary Design

Tel: 978 224 3123 C: 617 721 3292
27 Congress Street, Suite 508
Salem, MA 01970

HATCH

Holmes, Hilary

From: Bitsko, Duke
Sent: Thursday, June 28, 2018 8:39 AM
To: Marold, Misty-Anne (FWE)
Cc: Frost, Karro (FWE); Holmes, Hilary; Leddick, Jesse (FWE); Lela Shepherd
Subject: RE: Arlington Spy Pond Shoreline Restoration Project
Attachments: VPRS Report for Spy Pond.pdf

Misty-Anne,

Attached please find Dr. Gregg Moore's Plant Observation Report for your review and use.

Our permitting process via Chapter 91 is lengthy and we would like to submit the application (as well as NOI) as soon as possible. The Town of Arlington's grant identifies 2019 as the construction period for the four restoration sites including Spy Pond Park.

Please let me know when you think we can expect to receive comments on the meeting minutes, the revised sketch plan/section, and observation report.

Many thanks, Duke.

From: Bitsko, Duke
Sent: Thursday, June 21, 2018 4:05 PM
To: Marold, Misty-Anne (FWE) <misty-anne.marold@state.ma.us>
Cc: Frost, Karro (FWE) <karro.frost@state.ma.us>; Bitsko, Duke <duke.bitsko@hatch.com>; Holmes, Hilary <hilary.holmes@hatch.com>
Subject: Arlington Spy Pond Shoreline Restoration Project

Hi, Misty-Anne.

We are working with Rich Kirby at LEC and Gregg Moore to upload the sedge locations to the VPRS site. We should have this completed by COB tomorrow.

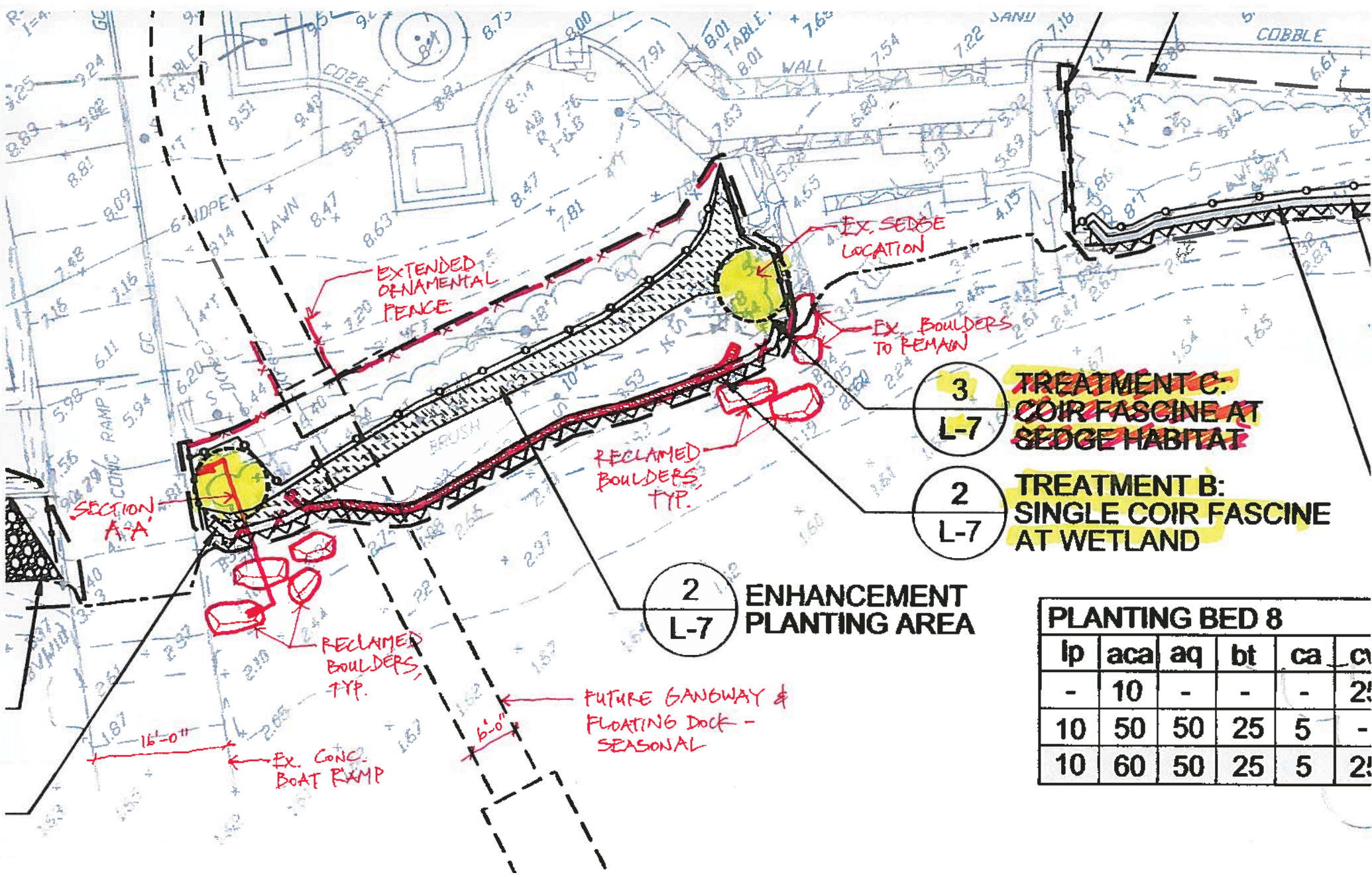
Do you have a rough estimate of when NHESP could provide feedback on the Spy Pond project in relation to the protection of existing threatened umbrella sedge habitat? We have missed two deadlines for our NOI submission and I would like to let them know when we might submit.

Thanks in advance. Duke

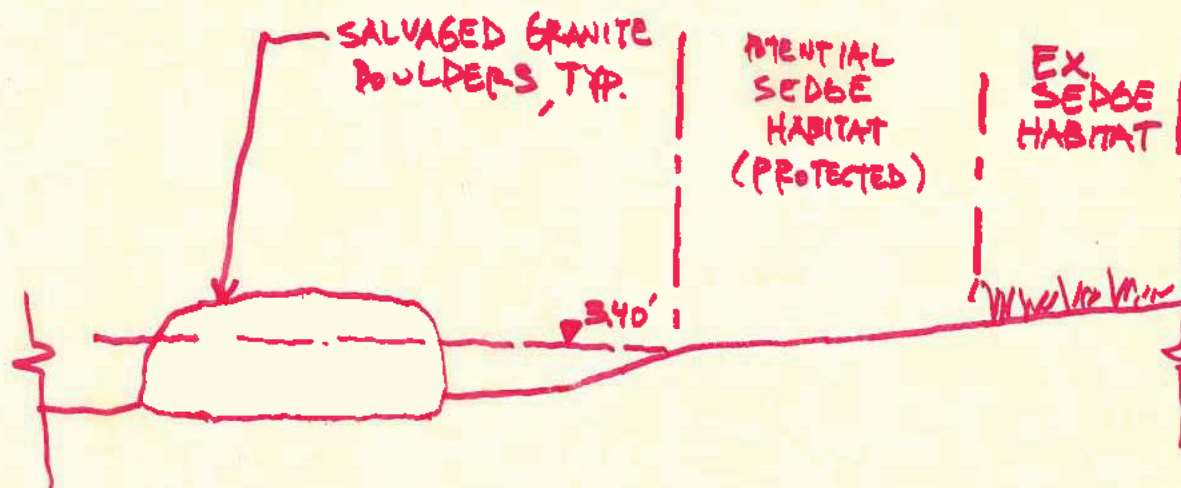
Duke Bitsko, PLA
Director, Interdisciplinary Design

Tel: 978 224 3123 C: 617 721 3292
27 Congress Street, Suite 508
Salem, MA 01970

HATCH



| PLANTING BED 8 | | | | | |
|----------------|-----|----|----|----|----|
| lp | aca | aq | bt | ca | ca |
| - | 10 | - | - | - | 2! |
| 10 | 50 | 50 | 25 | 5 | - |
| 10 | 60 | 50 | 25 | 5 | 2! |



SECTION A-A': BOULDER PROTECTION @ CONC. BOAT RAMP

NOT TO SCALE

APPENDIX E OPERATION AND MAINTENANCE PLAN



MEMO

{Date:} 7/18/18

{To:} Arlington Park and Recreation Commission

{From:} Hilary Holmes
Hatch Associates Consultants, Inc.
27 Congress Street, Suite 508
Salem, MA 01970
978-224-3131

{Re:} **Spy Pond Project – Stormwater Operations and Maintenance Plan**

General Information

1. Stormwater management system owner: Town of Arlington Park and Recreation Commission and Department and Public Works
2. Parties responsible for O&M: Town of Arlington Park and Recreation Commission and Department and Public Works. The Contractor is responsible for operations and maintenance of the system during construction.
3. Stormwater components and locations:
 - a. Spring Valley Street – Bioretention Basin
 - b. Spy Pond Park and Scannell Field – Vegetated Swale and Bioretention Basin
4. The stormwater management system will be inspected and cleaned prior to the completion of construction by the Contractor. A report of the inspection/cleaning will be forwarded to the design engineer and the Town of Arlington Conservation Commission. All material removed during the cleaning operations shall be disposed of in accordance with applicable guidelines and regulations.
5. The stormwater management system shall be inspected the first year of operation after large rainfall events (all storms greater than 1-inch in 24-hour period) to verify functionality.
6. All post construction maintenance activities will be documented and kept on file and made available to the Arlington Conservation Commission upon request.
7. The drainage system shall be maintained. The repair of any component of the system shall be made as soon as possible to prevent any potential pollutants (including silt) from entering the resource areas or the existing closed drainage system.

Construction of the System

Sediment and erosion control during construction will prevent possible damage to the drainage systems. The following guidelines shall be adhered to during construction.



1. Keep land disturbance to a minimum. Plan the phases of development so that only the areas actively being developed are exposed. All other areas should have natural vegetation preserved, have good temporary cover, or permanent vegetation established.
2. Stabilize disturbed areas. Permanent structures, temporary or permanent vegetation, and mulch should be employed as quickly as possible after land is disturbed.
3. Protect disturbed areas from stormwater runoff. Install erosion control or stormwater management measures to prevent water from entering and running over disturbed areas, and to prevent erosion damage to downstream facilities.
4. Install perimeter control practices. Use practices that isolate the development site from surrounding areas. Straw wattles shall be utilized.

Maintenance of the System

| TABLE 1: STORMWATER GREEN INFRASTRUCTURE BEST MANAGEMENT PRACTICE (BMP) | | | |
|--|---|---|---|
| MAINTENANCE OF THE SYSTEM DURING CONSTRUCTION | | | |
| Sediment Control | Inspection | Maintenance Thresholds | Maintenance Action |
| Erosion control straw wattles | Weekly and after large storm events (more than 1-inch of rainfall in 24-hr period). | When accumulated sediment reaches ½ the height of the wattle; If the integrity of the system is compromised. | Remove and dispose of accumulated sediment; Restore the integrity of the system |
| Catch basins with Silt Sacks | Weekly and after large storm events (more than 1-inch of rainfall in 24-hr period). | When sack is ½ full or when flow capacity has been reduced so as to cause flooding or bypassing of the catch basin. | Remove and dispose of accumulated sediment; Damaged or clogged sacks shall be replaced. |
| Adjacent Roadways | Throughout construction. | Any sediment or debris deposited on roadways. | Remove and clean any sediment or debris deposited on the roadway due to construction activities |
| Grassed Swale | Weekly and after large storm events (more than 1-inch of rainfall in 24-hr period). | Flow to grassed swale shall be diverted until vegetation is stabilized. | Remove and dispose of any accumulated sediment at diversion; restore if needed |
| Bioretention Basin | Weekly and after large storm events (more than 1-inch of rainfall in 24-hr period). | Flow to grassed swale shall be diverted until vegetation is stabilized. | Remove and dispose of any accumulated sediment at diversion; restore if needed |

**TABLE 2: STORMWATER GREEN INFRASTRUCTURE BEST MANAGEMENT PRACTICE (BMP)
POST CONSTRUCTION MAINTENANCE OF THE SYSTEM**

| Sediment Control | Maintenance Activity | Frequency | Specialty Equipment | Responsible Party |
|--------------------|---|--|-------------------------------|--|
| Grassed Swale | Inspect swale and repair areas of erosion and revegetate | As needed, not no less than annually | Mower | Parks and Recreation |
| | Mow | As necessary. Grass height shall not exceed 6 inches | | |
| | Remove sediment and debris manually | Monthly | | |
| Bioretention Basin | Remove trash and debris from basin floor, inlets, and outlets; remove weeds and invasive species by hand (growing season only). | Monthly | Vacuum & jet-rodder equipment | Vegetation Management – Parks and Recreation; Friends of Spy Pond volunteers |
| | Inspect cleanouts and overflow structures and remove debris, sediment, trash; Jet-rod conveyance and underdrain pipes; remove sediment buildup. | Annually | | |
| | Apply two inch (2”) layer of clean hardwood mulch. | Every 3 to 5 years | | |

APPENDIX F
DRAWING SET

SPY POND EDGE & EROSION CONTROL PROJECT

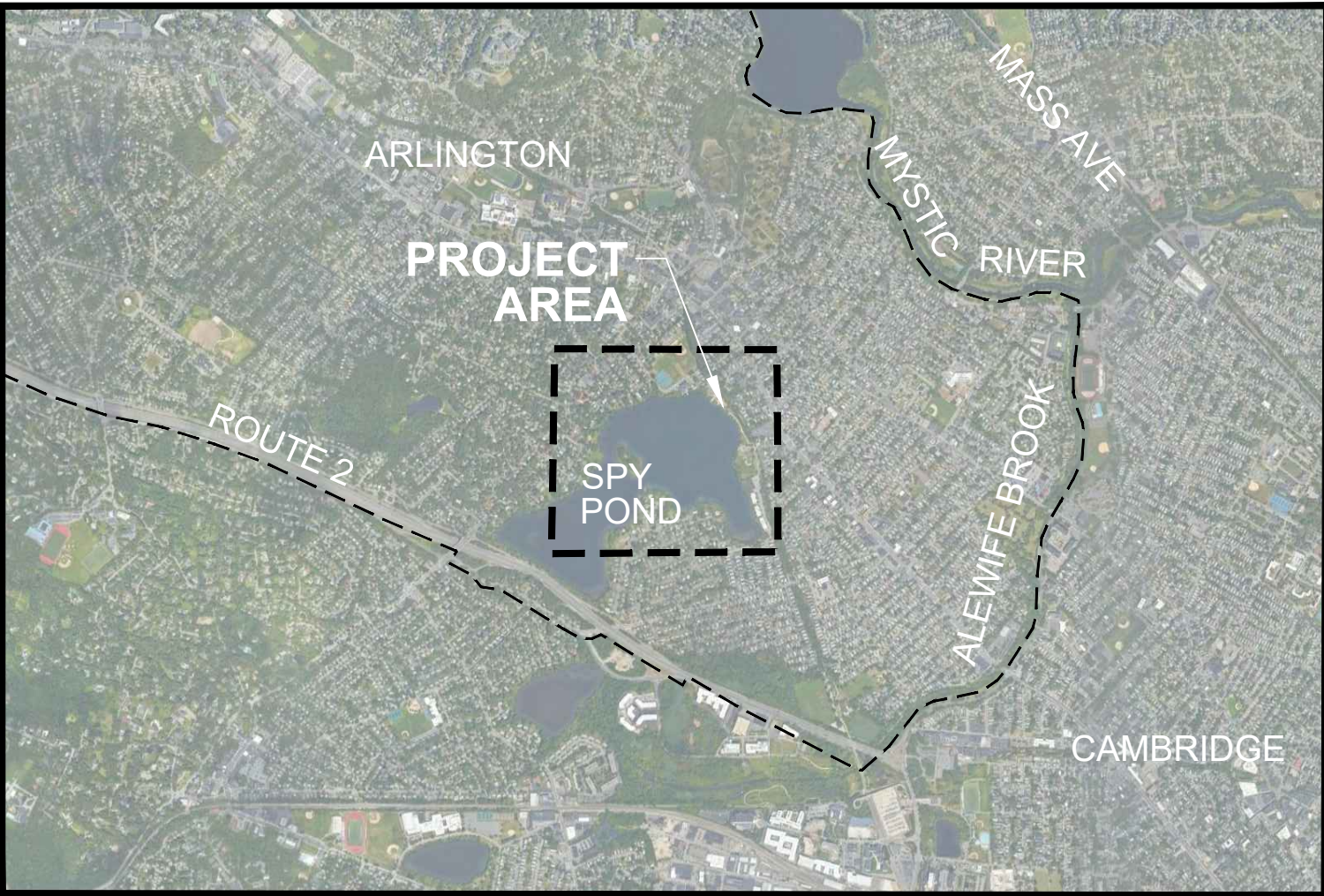
NOTICE OF INTENT SUBMITTAL

JULY 18, 2018

PROJECT LOCATION PLAN



SITE LOCUS PLAN - ARLINGTON



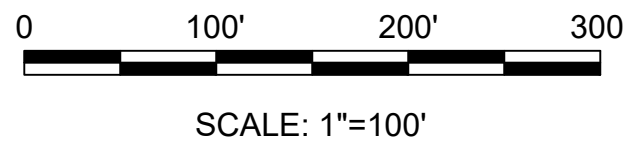
SCALE: NTS

PROJECT DESCRIPTION

- THE ARLINGTON PARK AND RECREATION COMMISSION AND ITS PARTNERS WISH TO MITIGATE EROSION AND PRESERVE PORTIONS OF PUBLIC SHORELINE AT SPY POND IN A MANNER THAT IMPROVES ECOLOGICAL STRUCTURE AND FUNCTION WHILE MEETING THE FOLLOWING GOALS:
- PRESERVE, STABILIZE AND STRENGTHEN APPROXIMATELY 1,530 LF OF SHORELINE TO SUSTAIN AND ENHANCE THE POND'S ECOLOGICAL HEALTH
- IDENTIFY AND CONTROL SOURCES OF EROSION ALONG THE BANKS OF THE POND
- PROTECT AND ENHANCE WILDLIFE HABITAT BY PROTECTING THE POND'S NATURAL EDGES WITH BIOENGINEERING TECHNIQUES
- CONTROL ACCESS TO THE VEGETATED BUFFER AREAS TO PREVENT UNAUTHORIZED PATHS ALONG THE SHORELINE
- INCREASE RECREATIONAL QUALITY AND OPPORTUNITY FOR WATER USE ALONG THE POND SHORELINE
- INCREASE STORMWATER INFILTRATION ALONG THE SHORELINE

DRAWING INDEX

| SHEET NO. | SHEET TITLE |
|-------------|---|
| - | COVER SHEET |
| EC-1 & EC-2 | EXISTING CONDITIONS & RESOURCE AREA PLANS |
| SP-1 & SP-2 | SITE PREPARATION PLANS |
| L-1 & L-2 | SITE PLANS |
| L-3 | SITE ENLARGEMENT PLAN & SECTIONS |
| L-4 TO L-8 | SITE DETAILS |



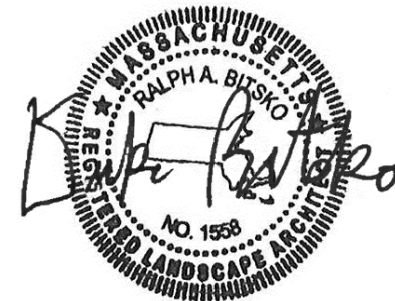
HATCH

27 Congress Street, Salem, MA 01970
tel. 978-740-0096 www.hatch.com

Client/Owner:

Town of Arlington Park &
Recreation Commission
422 Summer St.
Arlington, MA 02474

Stamp:



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
NOTICE OF INTENT SUBMITTAL

Project:

Job Number:

H-355321

Date:

July 18, 2018

Drawn By:

A. Keel

Designed By:

H. Holmes, G. Johnson

Reviewed By:

D. Bitko

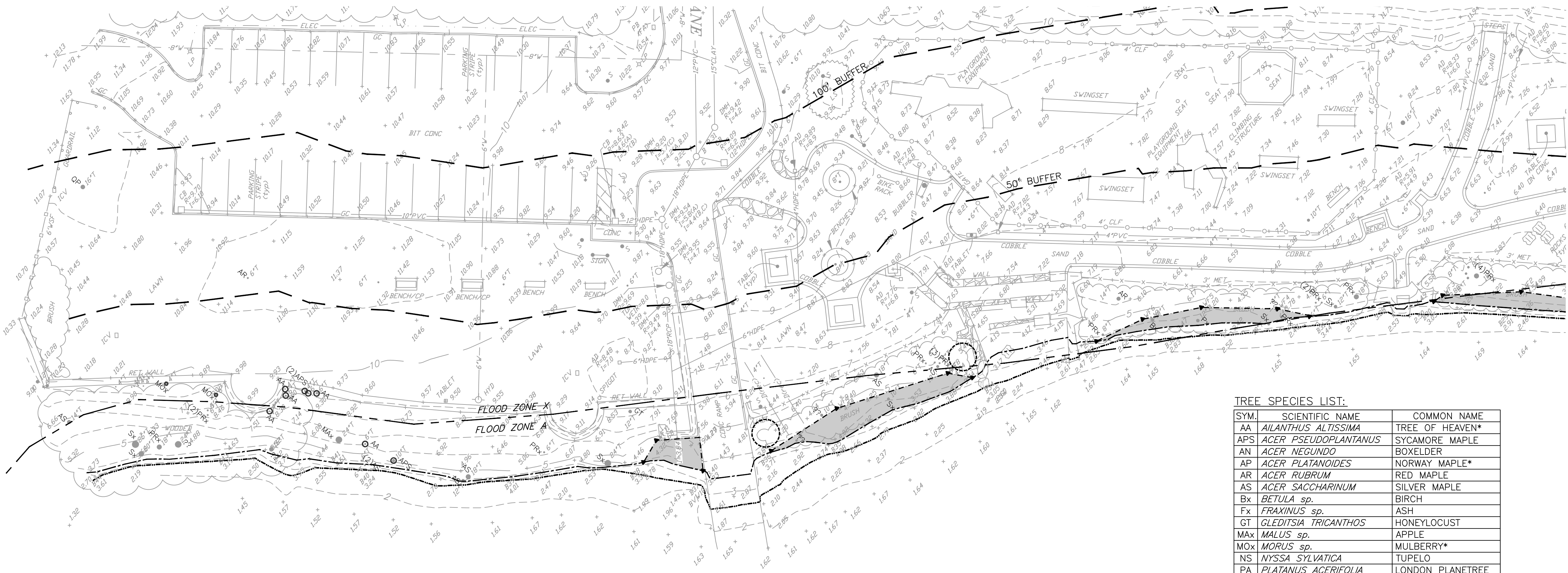
Revisions

Number: Description: Date:

Sheet Title:

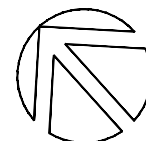
COVER SHEET

Sheet No:



AREA 1: SPY POND PARK (NORTH)

SCALE: 1" = 20'-0"



NORTH

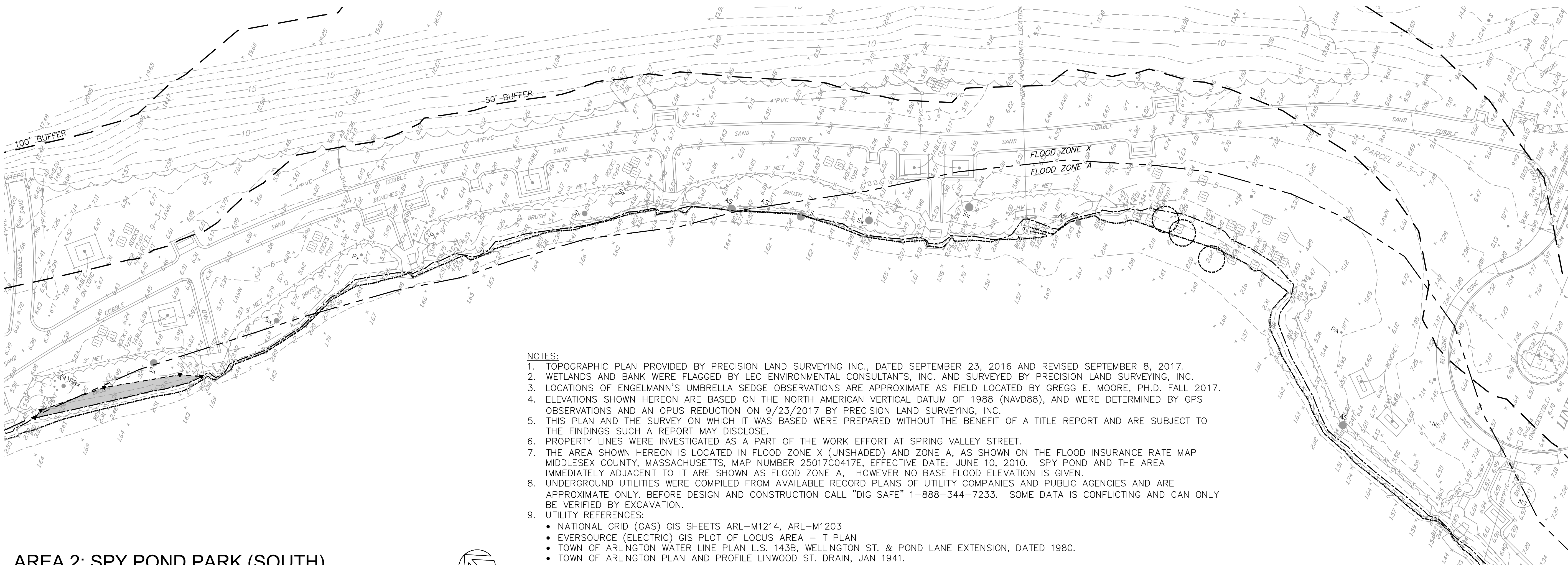
TREE SPECIES LIST:

| SYM. | SCIENTIFIC NAME | COMMON NAME |
|------|-------------------------------|------------------|
| AA | <i>AILANTHUS ALTISSIMA</i> | TREE OF HEAVEN* |
| APS | <i>ACER PSEUDOPLODANTANUS</i> | SYCAMORE MAPLE |
| AN | <i>ACER NEGUNDO</i> | BOXELDER |
| AP | <i>ACER PLATANOIDES</i> | NORWAY MAPLE* |
| AR | <i>ACER RUBRUM</i> | RED MAPLE |
| AS | <i>ACER SACCHARINUM</i> | SILVER MAPLE |
| Bx | <i>BETULA sp.</i> | BIRCH |
| Fx | <i>FRAXINUS sp.</i> | ASH |
| GT | <i>GLEDTISIA TRICANTHOS</i> | HONEYLOCUST |
| MAX | <i>MALUS sp.</i> | APPLE |
| MOX | <i>MORUS sp.</i> | MULBERRY* |
| NS | <i>NYSSA SYLVATICA</i> | TUPELO |
| PA | <i>PLATANUS ACERIFOLIA</i> | LONDON PLANETREE |
| Pix | <i>PICEA sp.</i> | SPRUCE |
| POX | <i>POPULUS sp.</i> | ASPEN, POPLAR |
| PRx | <i>PRUNUS sp.</i> | CHERRY |
| QP | <i>QUERCUS PALUSTRIS</i> | PIN OAK |
| Qx | <i>QUERCUS sp.</i> | OAK |
| RP | <i>ROBINIA PSEUDOACACIA</i> | BLACK LOCUST* |
| Sx | <i>SALIX sp.</i> | WILLOW |
| Ux | <i>ULMUS sp.</i> | ELM |

* INVASIVE SPECIES

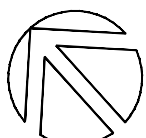


- LEGEND:**
- AD BIT CONC
 - BOT BOTTOM
 - BR BIKE RACK
 - CB CATCH BASIN
 - CLF CHAIN LINK FENCE
 - CONC CONCRETE
 - DMH DRAIN MANHOLE
 - FA FIRE ALARM
 - GC GRANITE CURB
 - GW GUY WIRE
 - HW HEADWALL
 - HYD HYDRANT
 - I= INVERT=
 - ICV IRRIGATION CONTROL VALVE
 - LP LIGHT POLE
 - LS LANDSCAPING
 - MC METAL COVER
 - MET METAL
 - MH MANHOLE
 - N.P.V. NO PIPES VISIBLE
 - P POST
 - PB PULL BOX
 - R= RIM=
 - RCP REINFORCED CONCRETE PIPE
 - S SIGN
 - UP UTILITY POLE
 - WC WATER GATE
 - WSF WOOD STOCKADE FENCE
 - 12" T 12" TREE
 - C HANDICAPPED PARKING
 - OVERHEAD WIRES
 - W WATER LINE
 - D DRAIN LINE
 - 10- GRADE CONTOUR
 - PROPERTY LINE
 - EDGE OF WATER AT TIME OF SURVEY
 - FEMA FLOOD ZONE LINE
 - LIMIT OF BORDERING
 - VEGETATED WETLAND
 - BORDERING VEGETATED WETLAND
 - BANK
 - BUFFER ZONE
 - BANK (B) & WETLAND (WF) FLAGS
 - Cyperus engelmannii LOCATION (OBSERVED OCTOBER 2017)



AREA 2: SPY POND PARK (SOUTH)

SCALE: 1" = 20'-0"



NORTH

NOTES:

1. TOPOGRAPHIC PLAN PROVIDED BY PRECISION LAND SURVEYING INC., DATED SEPTEMBER 23, 2016 AND REVISED SEPTEMBER 8, 2017.
2. WETLANDS AND BANK WERE FLAGGED BY LEC ENVIRONMENTAL CONSULTANTS, INC. AND SURVEYED BY PRECISION LAND SURVEYING, INC.
3. LOCATIONS OF ENGELMANN'S UMBRELLA SEDGE OBSERVATIONS ARE APPROXIMATE AS FIELD LOCATED BY GREGG E. MOORE, PH.D. FALL 2017.
4. ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), AND WERE DETERMINED BY GPS OBSERVATIONS AND AN OPUS REDUCTION ON 9/23/2017 BY PRECISION LAND SURVEYING, INC.
5. THIS PLAN AND THE SURVEY ON WHICH IT WAS BASED WERE PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND ARE SUBJECT TO THE FINDINGS SUCH A REPORT MAY DISCLOSE.
6. PROPERTY LINES WERE INVESTIGATED AS A PART OF THE WORK EFFORT AT SPRING VALLEY STREET.
7. THE AREA SHOWN HEREON IS LOCATED IN FLOOD ZONE X (UNSHADED) AND ZONE A, AS SHOWN ON THE FLOOD INSURANCE RATE MAP MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 25017C0417E, EFFECTIVE DATE: JUNE 10, 2010. SPY POND AND THE AREA IMMEDIATELY ADJACENT TO IT ARE SHOWN AS FLOOD ZONE A. HOWEVER NO BASE FLOOD ELEVATION IS GIVEN.
8. UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. BEFORE DESIGN AND CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.
9. UTILITY REFERENCES:
 - NATIONAL GRID (GAS) GIS SHEETS ARL-M1214, ARL-M1203
 - EVERSOURCE (ELECTRIC) GIS PLOT OF LOCUS AREA - T PLAN
 - TOWN OF ARLINGTON WATER LINE PLAN L.S. 143B, WELLINGTON ST. & POND LANE EXTENSION, DATED 1980.
 - TOWN OF ARLINGTON PLAN AND PROFILE LINWOOD ST. DRAIN, JAN 1941.
 - TOWN OF ARLINGTON STORM DRAIN PLAN IN WELLINGTON STREET, JULY 1950.
 - TOWN OF ARLINGTON SHEETS L1 & L2, CONTRACT #2633, SPY POND PARK DATED 10/13/1992 BY PRESSLEY ASSOCIATES

HATCH

27 Congress Street, Salem, MA 01970
tel. 978-740-0096 www.hatch.com

Client/Owner:

Town of Arlington Park &
Recreation Commission
422 Summer St.
Arlington, MA 02474

Stamp:



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
NOTICE OF INTENT SUBMITTAL

Project:

Job Number:

H-355321

Date:

July 18, 2018

Drawn By:

A.Keel

Designed By:

Reviewed By:

H. Holmes, D.Bitsko

Revisions

Number:

Description:

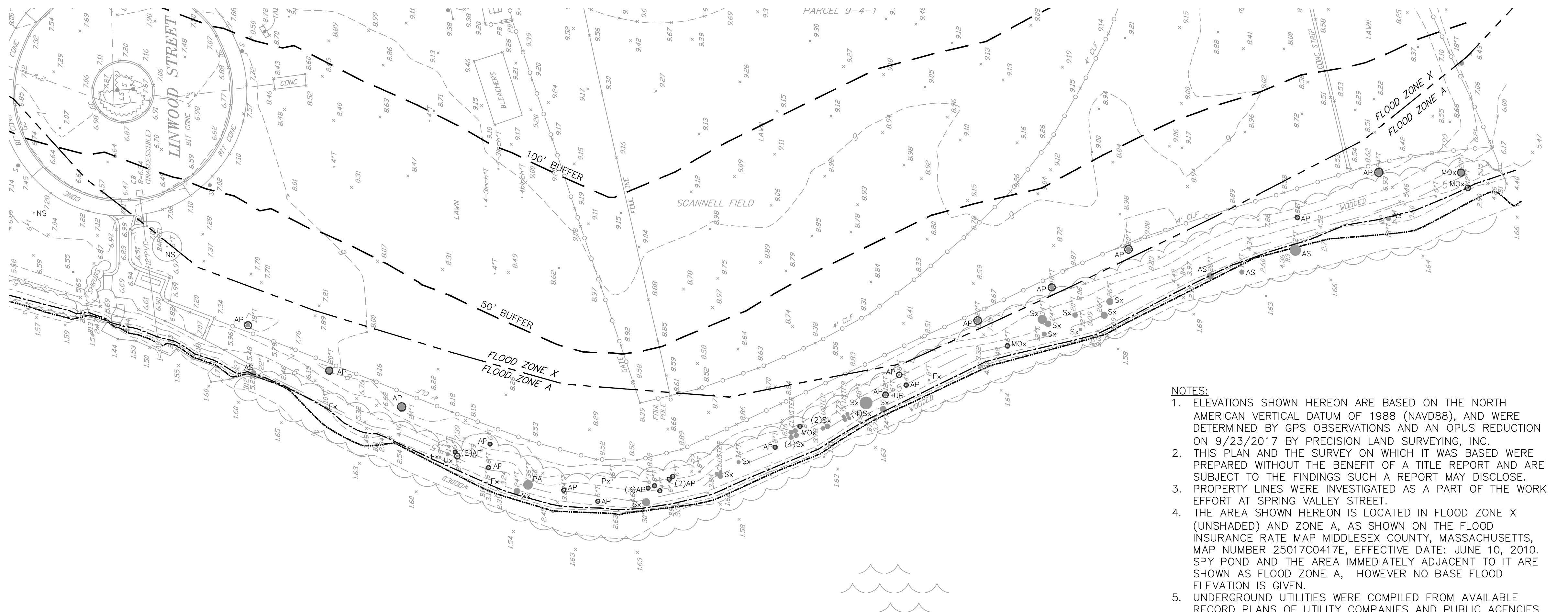
Date:

Sheet Title:

**EXISTING CONDITIONS
& WETLAND RESOURCE
AREAS PLAN**

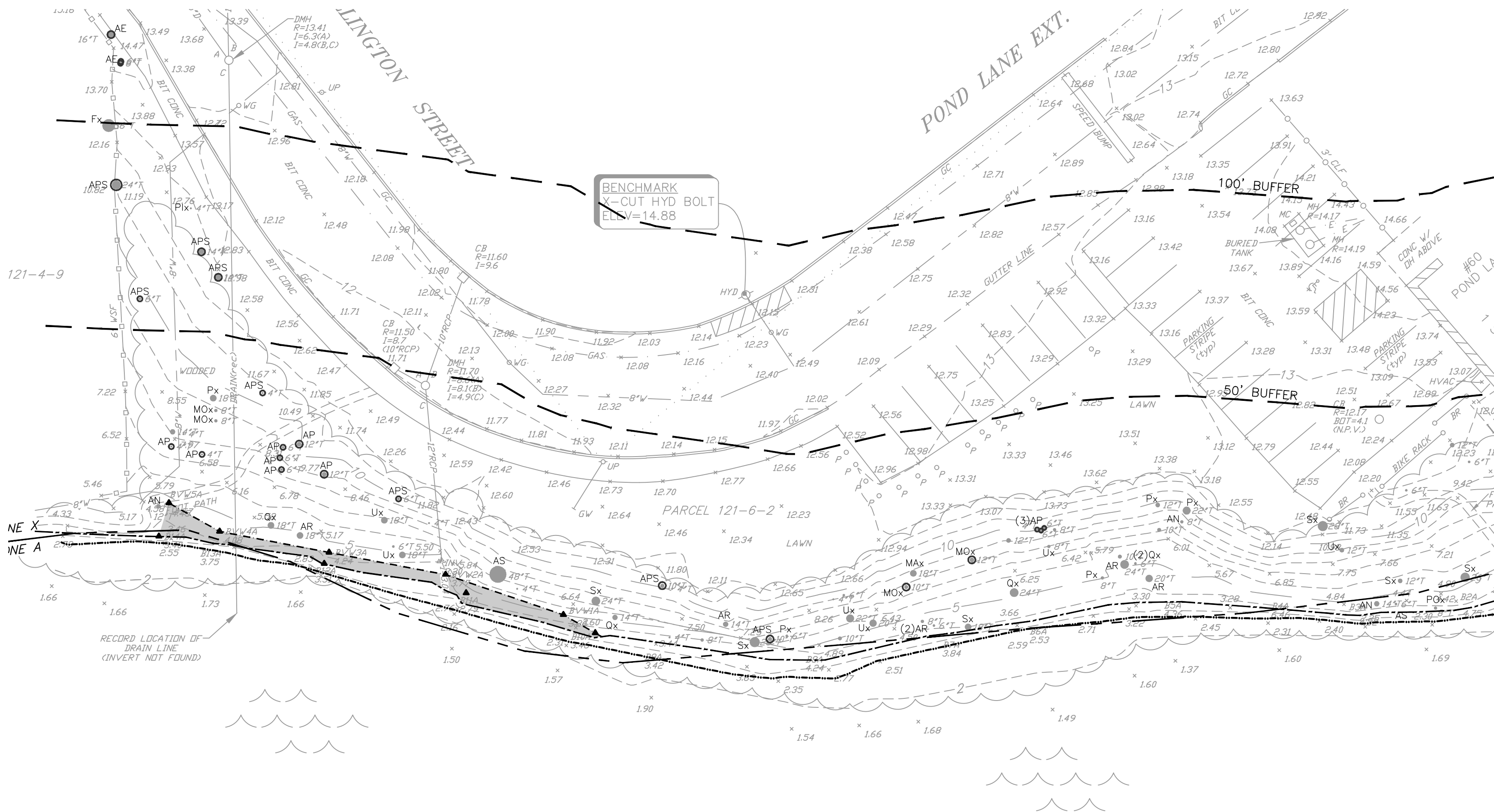
Sheet No:

EC-1



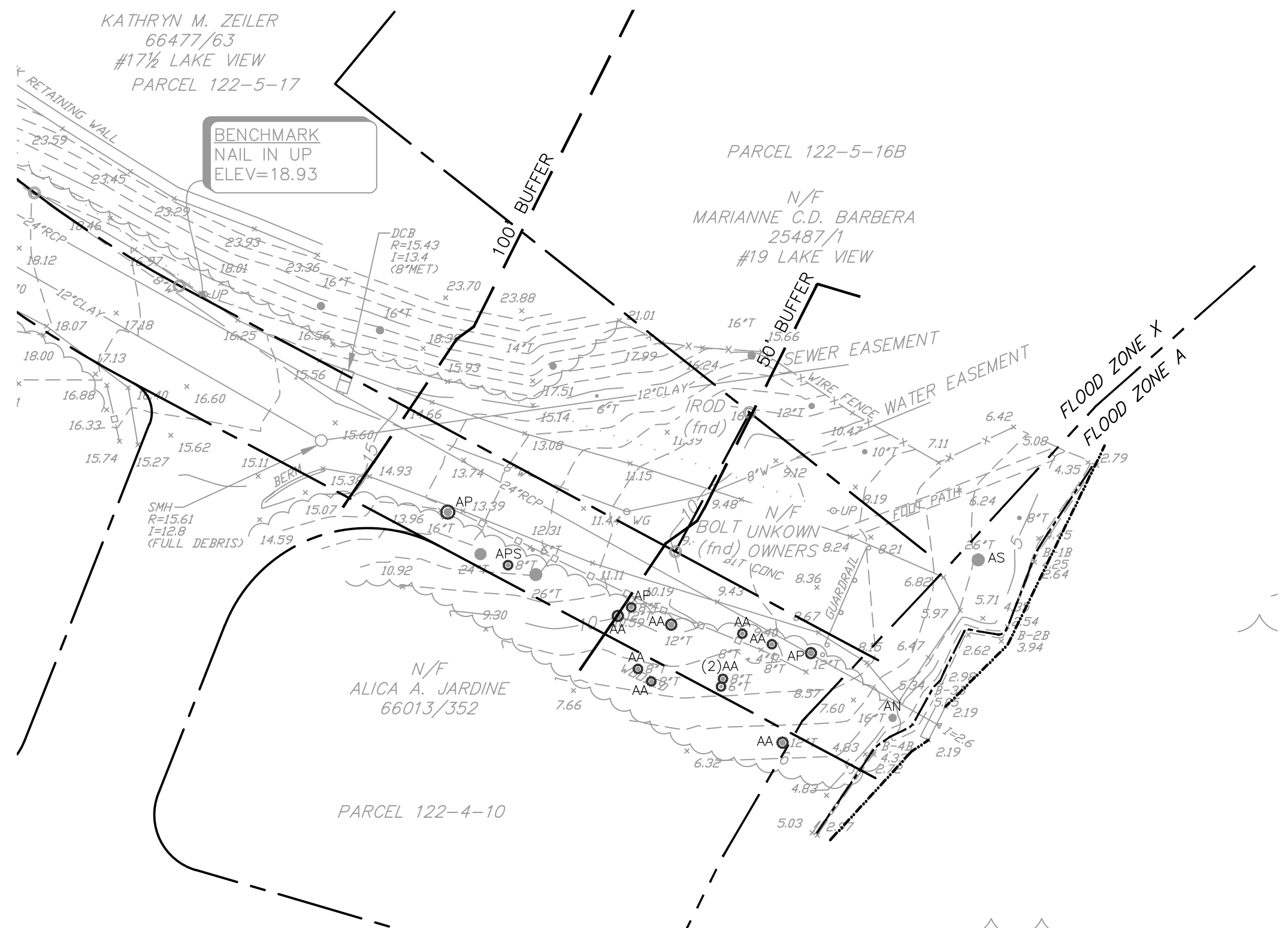
AREA 3: SCANNELL FIELD

SCALE: 1" = 20'-0"



AREA 4: BOYS AND GIRLS CLUB

SCALE: 1" = 20'-0"



AREA 5: SPRING VALLEY

SCALE: 1" = 20'-0"

LEGEND:

| | |
|----------|--------------------------------------|
| AD | AREA DRAIN |
| BIT CONC | BITUMINOUS CONCRETE |
| BOT | BOTTOM |
| BR | BIKE RACK |
| CB | CATCH BASIN |
| CLF | CHAIN LINK FENCE |
| CONC | CONCRETE |
| DMH | DRAIN MANHOLE |
| FA | FIRE ALARM |
| GC | GRANITE CURB |
| GW | GUY WIRE |
| HW | HEADWALL |
| HYD | HYDRANT |
| I= | INVERT= |
| ICV | IRRIGATION CONTROL VALVE |
| LP | LIGHT POLE |
| LS | LANDSCAPING |
| MC | METAL COVER |
| MET | METAL |
| MH | MANHOLE |
| N.P.V. | NO PIPES VISIBLE |
| P | POST |
| PB | PULL BOX |
| R= | REINFORCED CONCRETE PIPE |
| RCP | RCP |
| S | SIGN |
| UP | UTILITY POLE |
| WG | WATER GATE |
| WSF | WOOD STOCKADE FENCE |
| 12" T | 12" TREE |
| ○ | HANDICAPPED PARKING |
| —W— | OVERHEAD WIRES |
| —D— | WATER LINE |
| —D— | DRAIN LINE |
| —10— | GRADE CONTOUR |
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| --- | FEMA FLOOD ZONE LINE |
| --- | LIMIT OF BORDERING VEGETATED WETLAND |
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| --- | BANK |
| --- | BUFFER ZONE |
| ▲ | BANK (B) & WETLAND (WF) FLAGS |

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 - TOWN OF ARLINGTON WATER LINE PLAN L.S. 143B, WELLINGTON ST. & POND LANE EXTENSION, DATED 1980.
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| TREE SPECIES LIST: | | |
|--------------------|-----------------------------|------------------|
| SYM. | SCIENTIFIC NAME | COMMON NAME |
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| APS | <i>ACER PSEUDOPLATANUS</i> | SYCAMORE MAPLE* |
| AN | <i>ACER NEGUNDO</i> | BOXELDER |
| AP | <i>ACER PLATANOIDES</i> | NORWAY MAPLE* |
| AR | <i>ACER RUBRUM</i> | RED MAPLE |
| AS | <i>ACER SACCHARINUM</i> | SILVER MAPLE |
| Bx | <i>BETULA sp.</i> | BIRCH |
| Fx | <i>FRAXINUS sp.</i> | ASH |
| GT | <i>GLTISIA TRICANTHOS</i> | HONEYLOCUST |
| MAx | <i>MALUS sp.</i> | APPLE |
| MOx | <i>MORUS sp.</i> | MULBERRY* |
| NS | <i>NYSSA SYLVATICA</i> | TUPELO |
| PA | <i>PLATANUS ACERIFOLIA</i> | LONDON PLANETREE |
| Pix | <i>PICEA sp.</i> | SPRUCE |
| POx | <i>POPULUS sp.</i> | ASPEN, POPLAR |
| PRx | <i>PRUNUS sp.</i> | CHERRY |
| QP | <i>QUERCUS PALUSTRIS</i> | PIN OAK |
| Qx | <i>QUERCUS sp.</i> | OAK |
| RP | <i>ROBINIA PSEUDOACACIA</i> | BLACK LOCUST* |
| Sx | <i>SALIX sp.</i> | WILLOW |
| Ux | <i>ULMUS sp.</i> | ELM |

* INVASIVE SPECIES

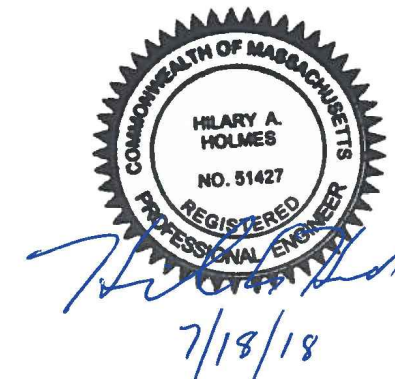
HATCH

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422 Summer St.
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Stamp:



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
NOTICE OF INTENT SUBMITTAL

Project:

Job Number:

H-355321

Date:

July 18, 2018

Drawn By:

A.Keel

Designed By:

Reviewed By:

H. Holmes, D.Bitsko

Revisions

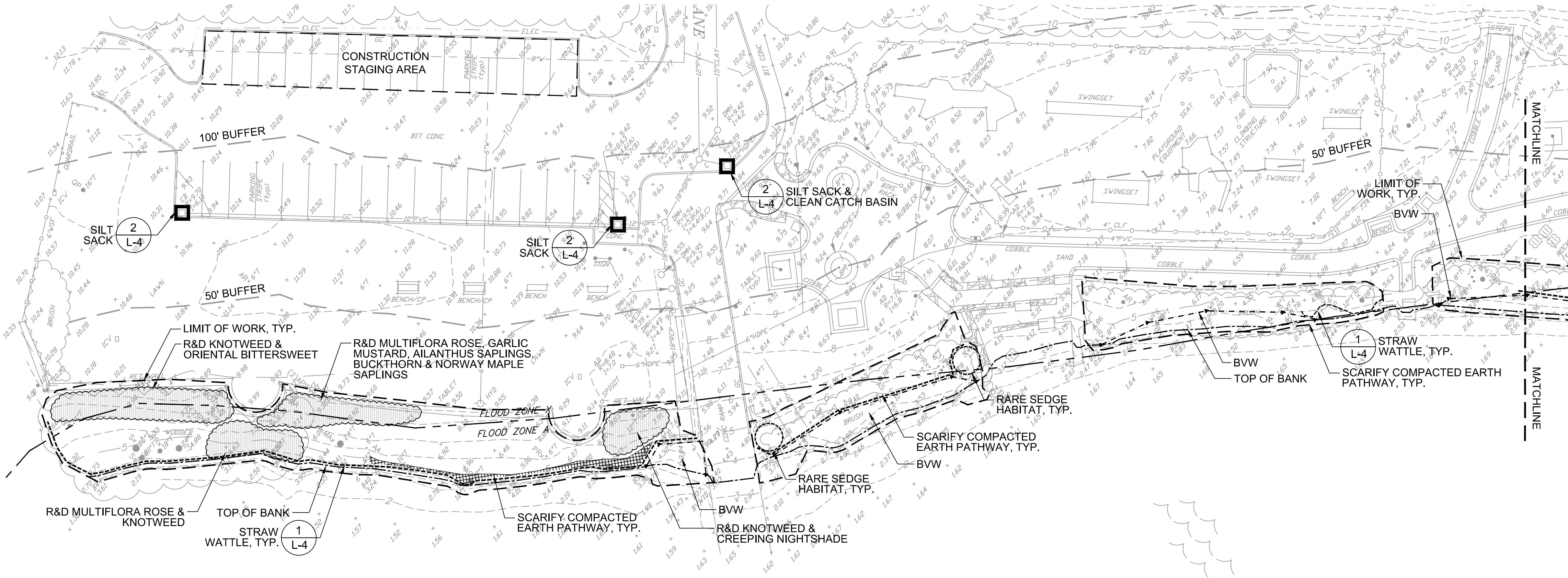
Number: Description: Date:

Sheet Title:

**EXISTING CONDITIONS
& RESOURCE AREA
PLAN**

Sheet No:

EC-2



- LEGEND**
- PROPERTY LINE
 - LIMIT OF WORK
 - TOP OF BANK
 - BORDERING VEGETATED WETLAND (BVW)
 - LIMIT OF 50'/100' BUFFER ZONE
 - FEMA FLOOD ZONE X LINE
 - STRAW WATTLE
 - SCARIFY COMPACTED EARTH PATH
 - INVASIVE PLANT REMOVAL
 - CYPERUS ENGELMANNII (OBSERVED OCT. 2017)
 - INLET PROTECTION
 - R&D REMOVE & DISPOSE OF
 - R&S REMOVE & STOCKPILE (SALVAGE)

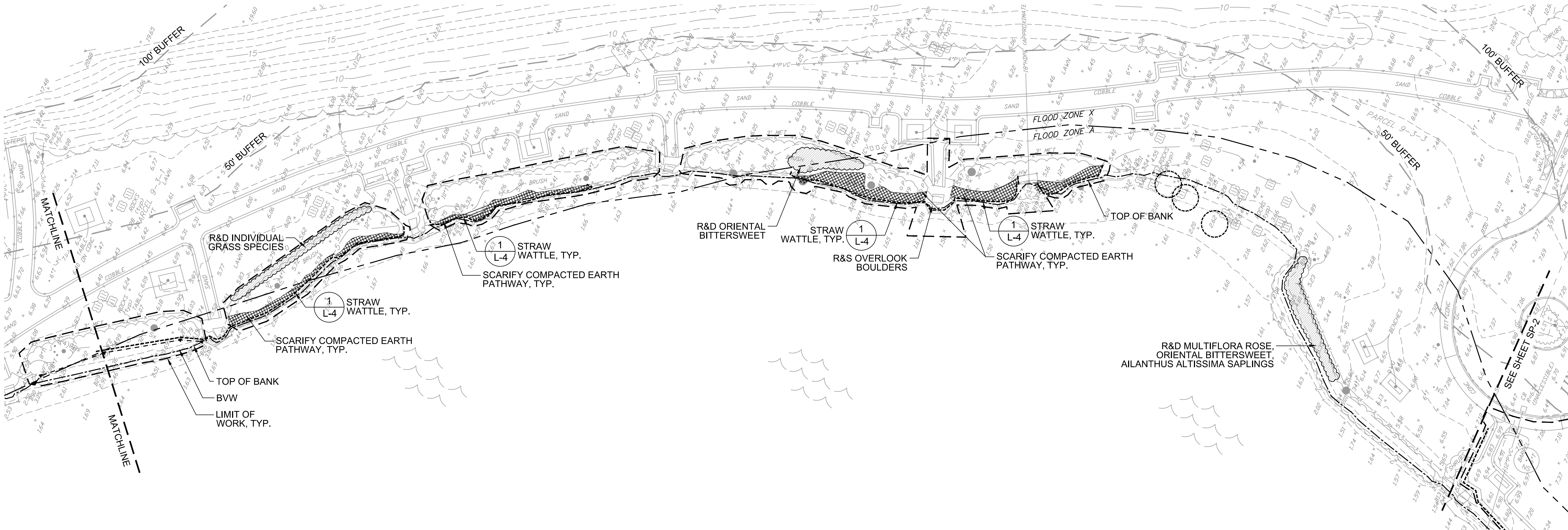
- NOTES:**
1. SPY POND WATER ELEVATION SHALL BE LOWERED TO ELEVATION 2.0 FT NAVD 88 PRIOR TO COMMENCEMENT OF ANY COIR FASCINE RELATED CONSTRUCTION ACTIVITIES. CONTACT ARLINGTON DPW TO COORDINATE WATER ELEVATION LEVEL.
 2. EROSION CONTROL FABRIC SHALL BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER WHERE SOILS ARE BEING REGRADED AND/OR SCARIFIED.
 3. LIMITS OF INVASIVE SPECIES REMOVAL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

0 20' 40' 60'



AREA 1: SPY POND PARK (NORTH)

SCALE: 1" = 20'-0"



AREA 2: SPY POND PARK (SOUTH)

SCALE: 1" = 20'-0"

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Project:

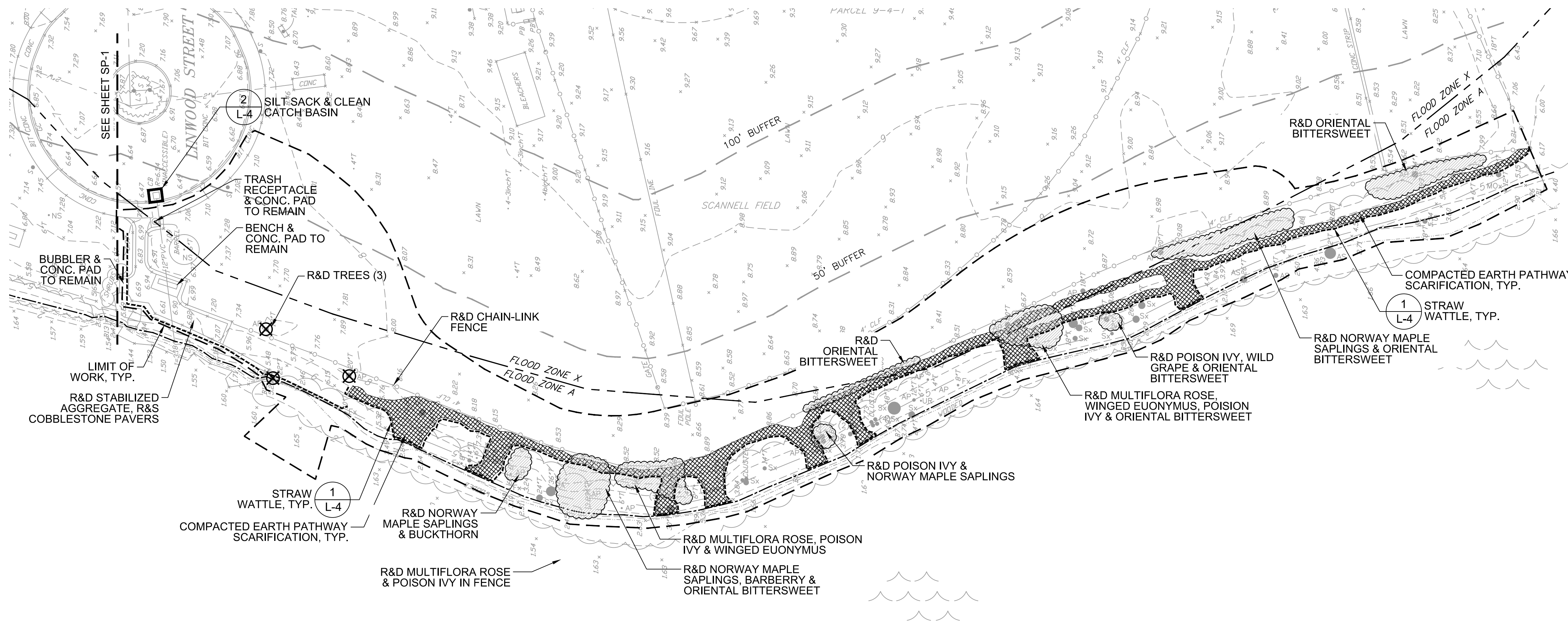
Job Number: H-355321
Date: July 18, 2018
Drawn By: A. Keel
Designed By: H. Holmes
Reviewed By: H. Holmes, D. Bitsko
Revisions:
Number: Description: Date:

Sheet Title:

**SITE PREPARATION
PLAN**

Sheet No:

SP-1



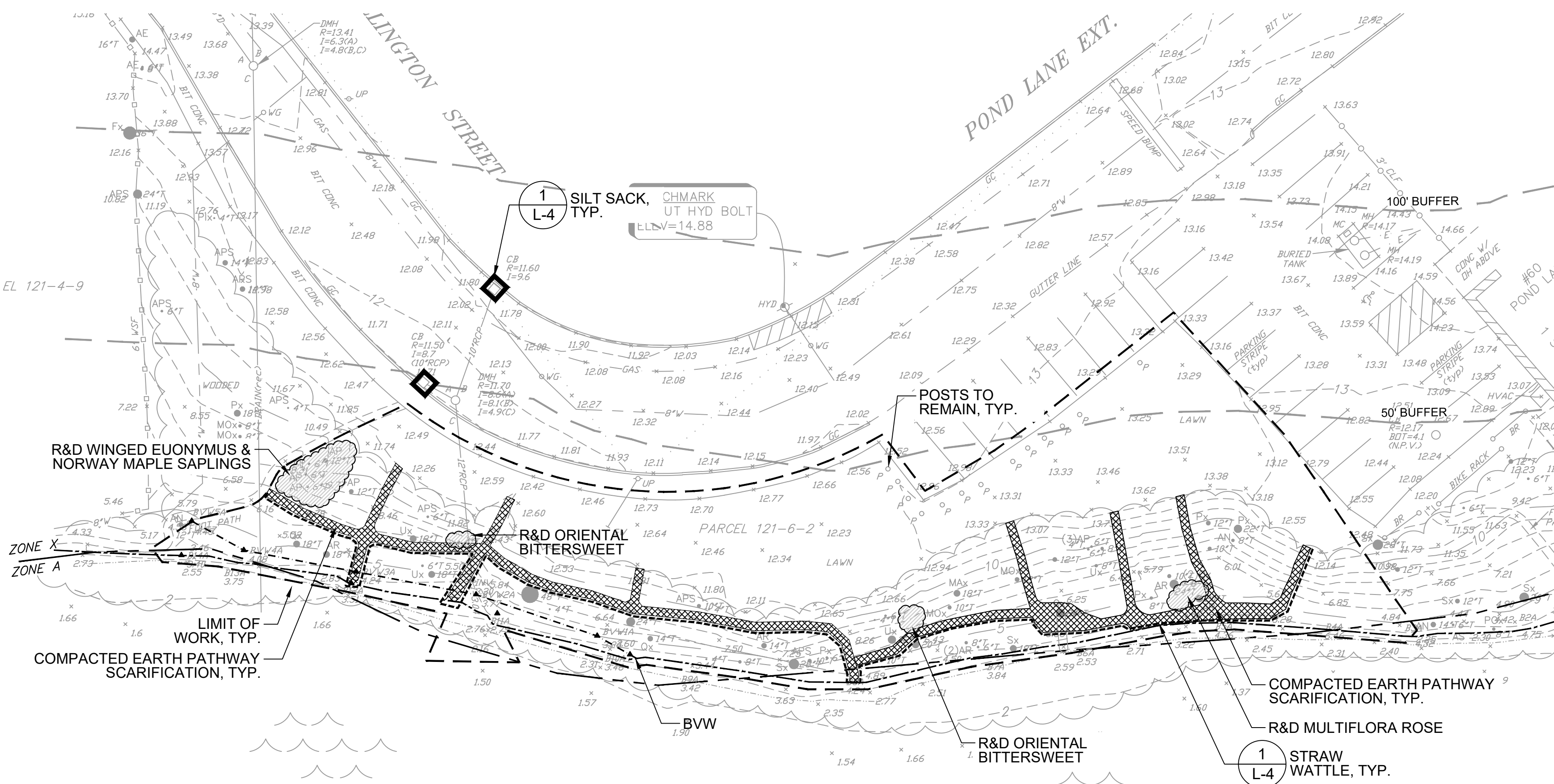
LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- TOP OF BANK
- BORDERING VEGETATED WETLAND (BVW)
- LIMIT OF 50'/100' BUFFER ZONE
- FEMA FLOOD ZONE X LINE
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- R&S REMOVE & STOCKPILE (SALVAGE)

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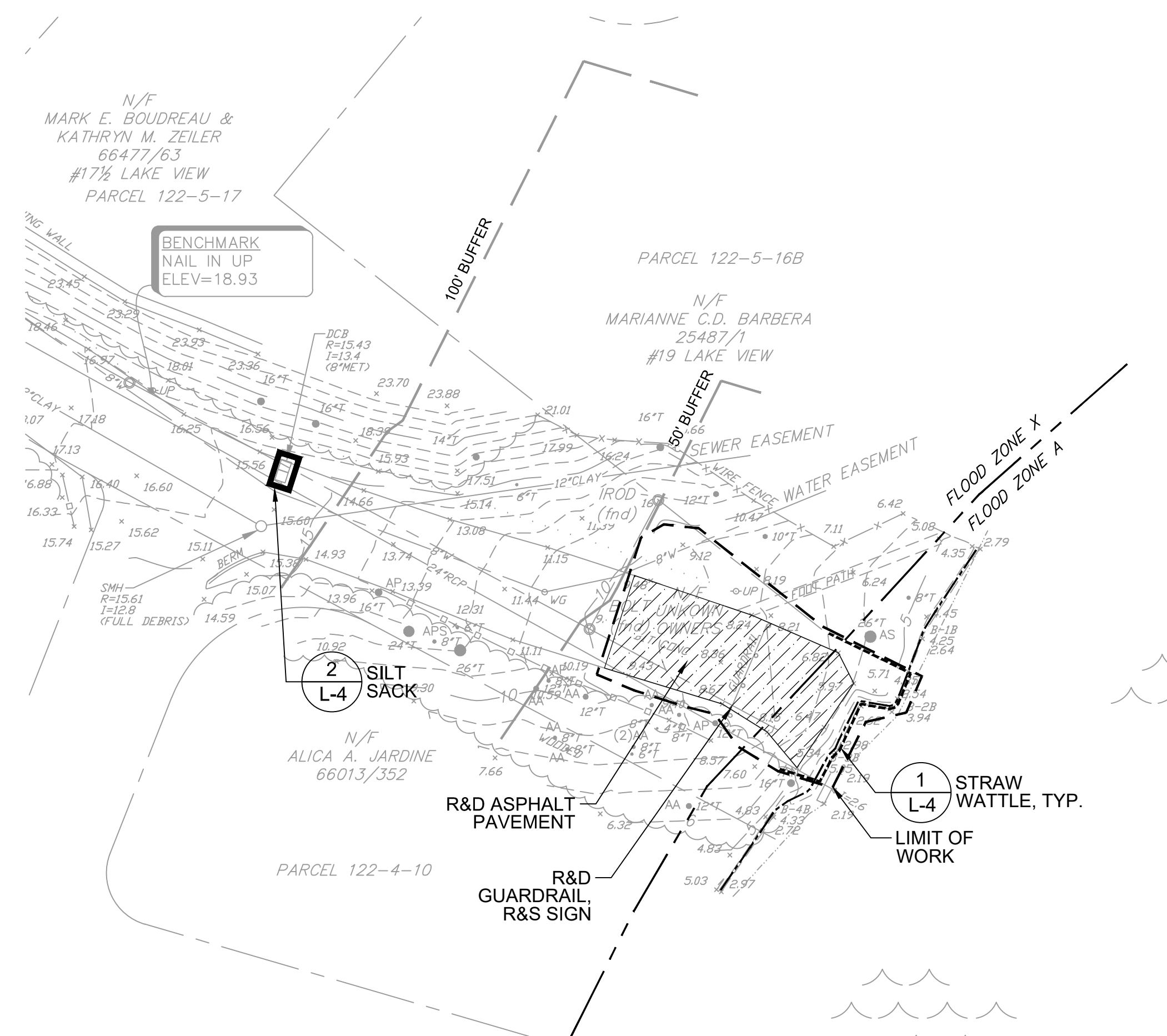
AREA 3: SCANNELL FIELD

SCALE: 1" = 20'-0"



AREA 4: BOYS AND GIRLS CLUB

SCALE: 1" = 20'-0"



AREA 5: SPRING VALLEY

SCALE: 1" = 20'-0"

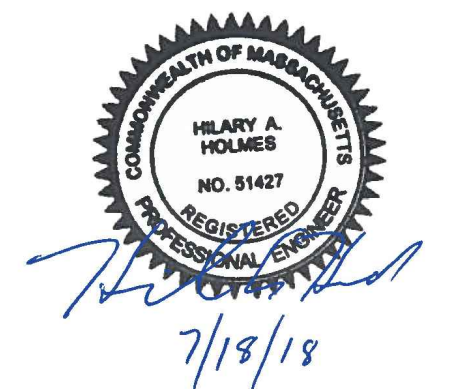
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Revisions

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Description:

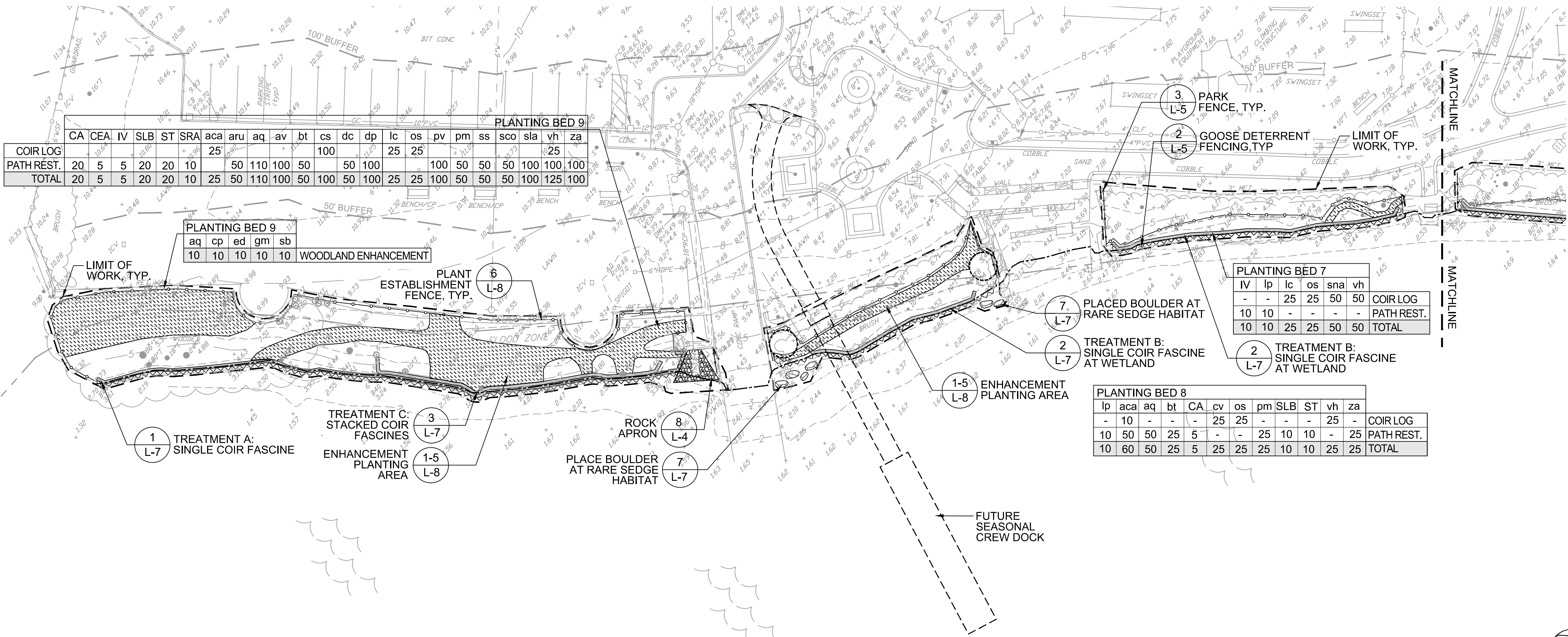
Date:

Sheet Title:

SITE PREPARATION
PLAN

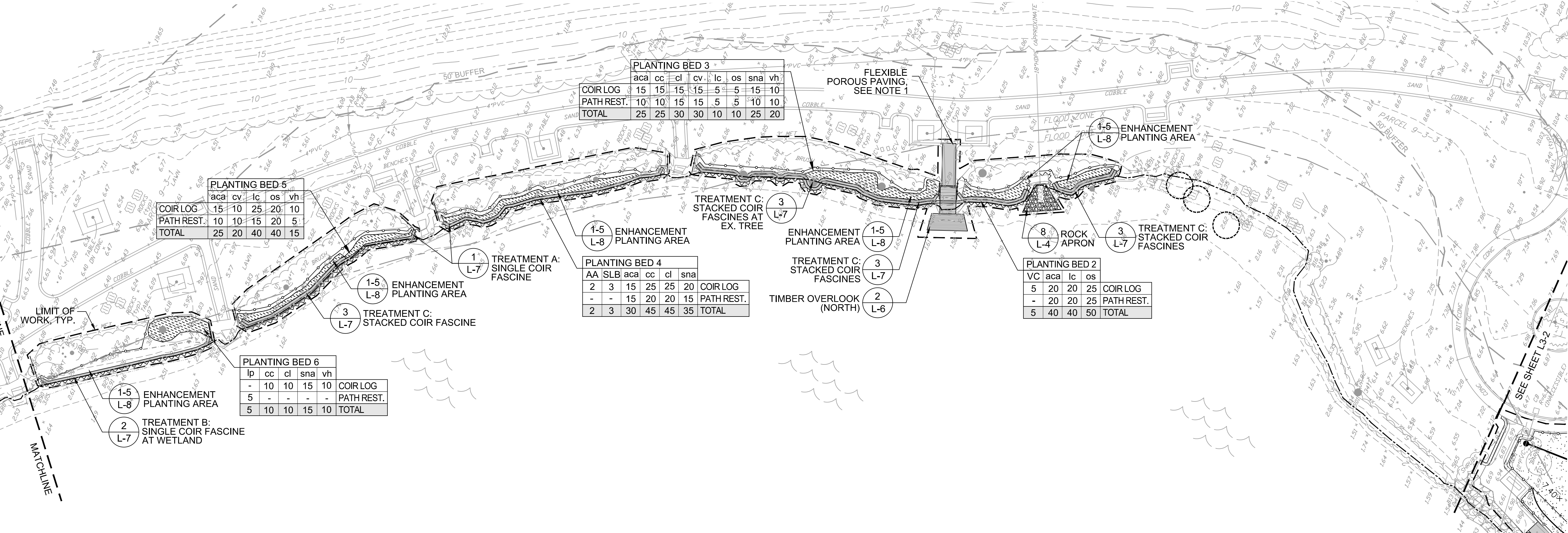
Sheet No:

SP-2



AREA 1: SPY POND PARK (NORTH)

SCALE: 1" = 20'-0"



AREA 1: SPY POND PARK (SOUTH)

SCALE: 1" = 20'-0"

LEGEND

- LIMIT OF WORK
- [Pattern] FLEXI-PAVE SURFACING
- CHAIN LINK FENCE (4' HT.)
- GOOSE EXCLUSION FENCING
- [Pattern] ENHANCEMENT PLANTING AREA
- [Pattern] PLUG PLANTING
- [Pattern] MEADOW SEED MIX
- [Pattern] TALL TURF SEED MIX
- [Pattern] LAWN SEED MIX
- PLANT ESTABLISHMENT FENCE (4' HT.)
- PARK FENCE (33" HT.)

NOTES

- FLEXIBLE POROUS PAVEMENT PATHS TO BE CONSTRUCTED AS PART OF A SEPARATE SPY POND PATHWAY RESURFACING PROJECT FOR WHICH A REQUEST FOR DETERMINATION OF APPLICABILITY (RDA) HAS BEEN SUBMITTED. THIS WORK IS NOT PART OF THE ECOLOGICAL RESTORATION NOI SUBMITTAL.

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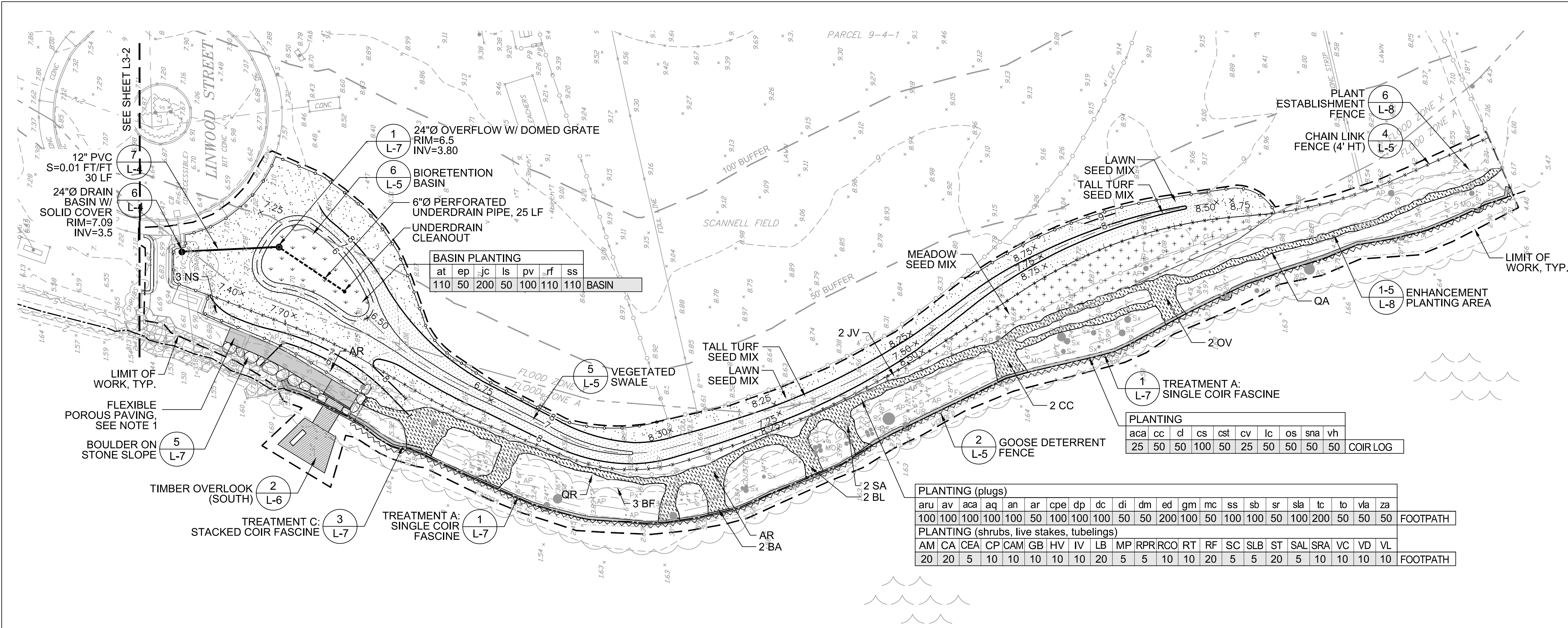
Job Number: H-355321
Date: July 18, 2018
Drawn By: A.Keel
Designed By: H.Holmes, B.Neville, G.Johnson
Reviewed By: D.Bitko
Revisions:
Number: Description: Date:

Sheet Title:

SITE PLAN

Sheet No:

L-1

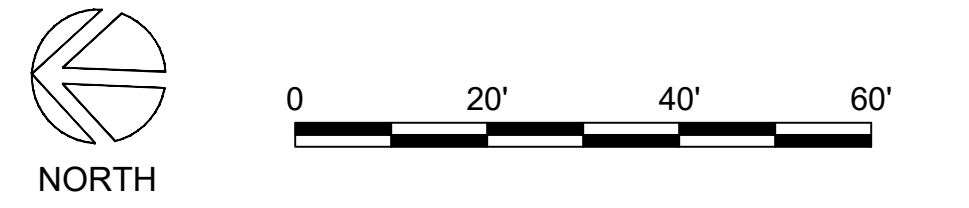


LEGEND

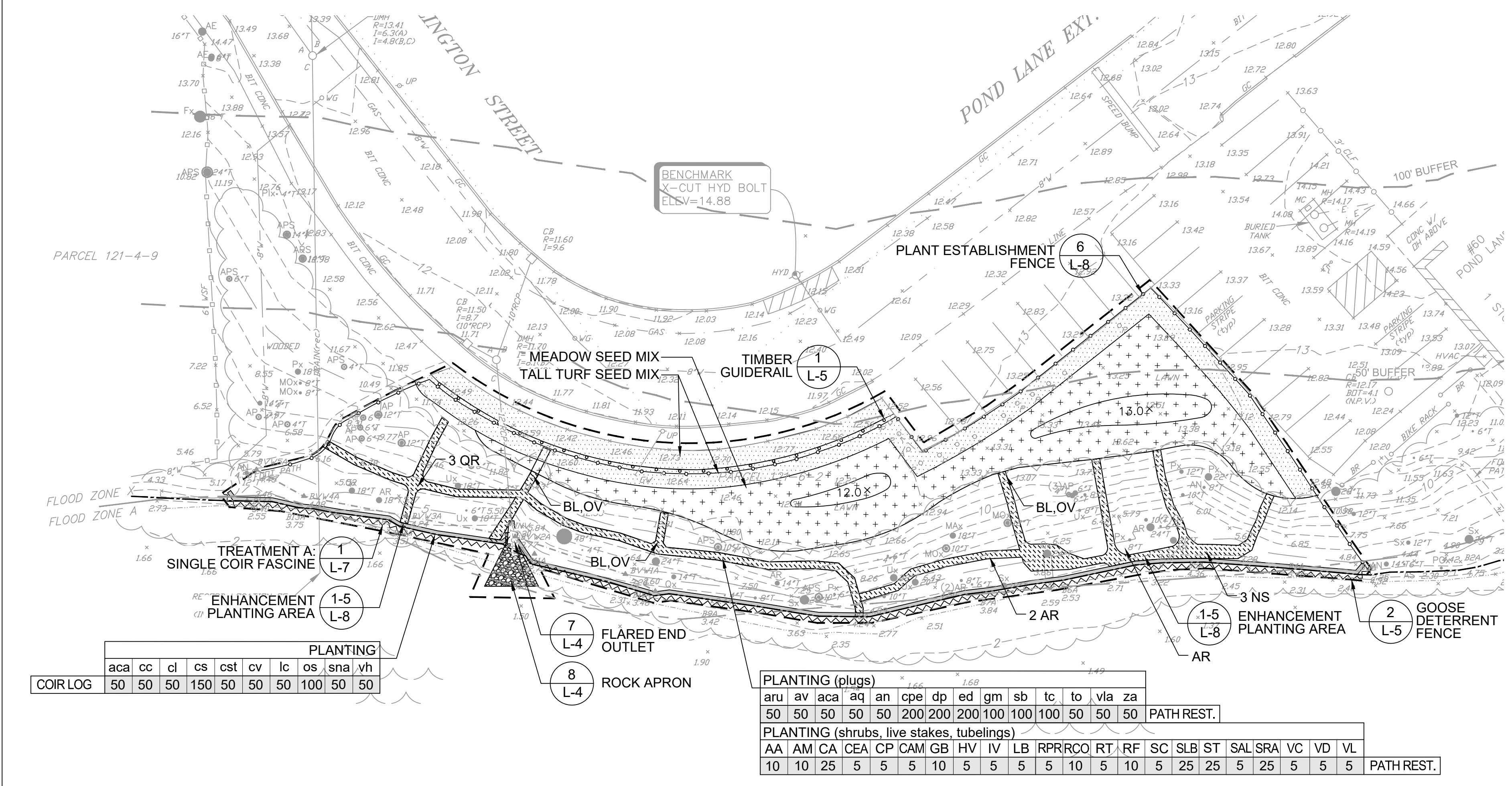
- PROPERTY LINE
- LIMIT OF WORK
- FLEXI-PAVE SURFACING
- CHAIN LINK FENCE (4' HT.)
- GOOSE EXCLUSION FENCING
- ENHANCEMENT PLANTING AREA
- PLUG PLANTING
- MEADOW SEED MIX
- TALL TURF SEED MIX
- LAWN SEED MIX
- PLANT ESTABLISHMENT FENCE (4' HT.)
- PARK FENCE (33' HT.)

NOTES

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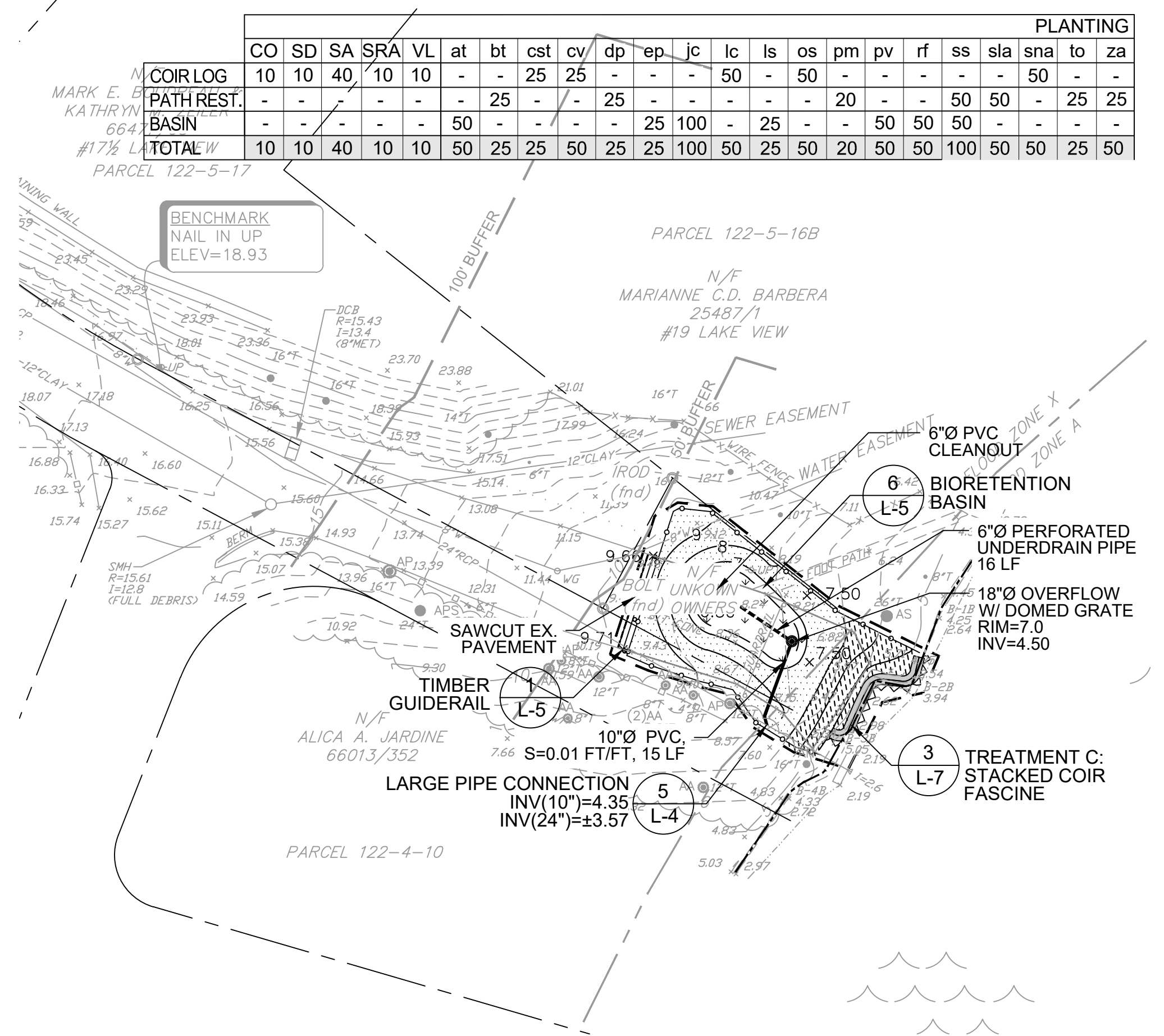


AREA 2: SCANNELL FIELD
SCALE: 1" = 20'-0"



AREA 3: BOYS AND GIRLS CLUB
SCALE: 1" = 20'-0"

AREA 4: SPRING VALLEY
SCALE: 1" = 20'-0"



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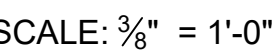
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7/18/18

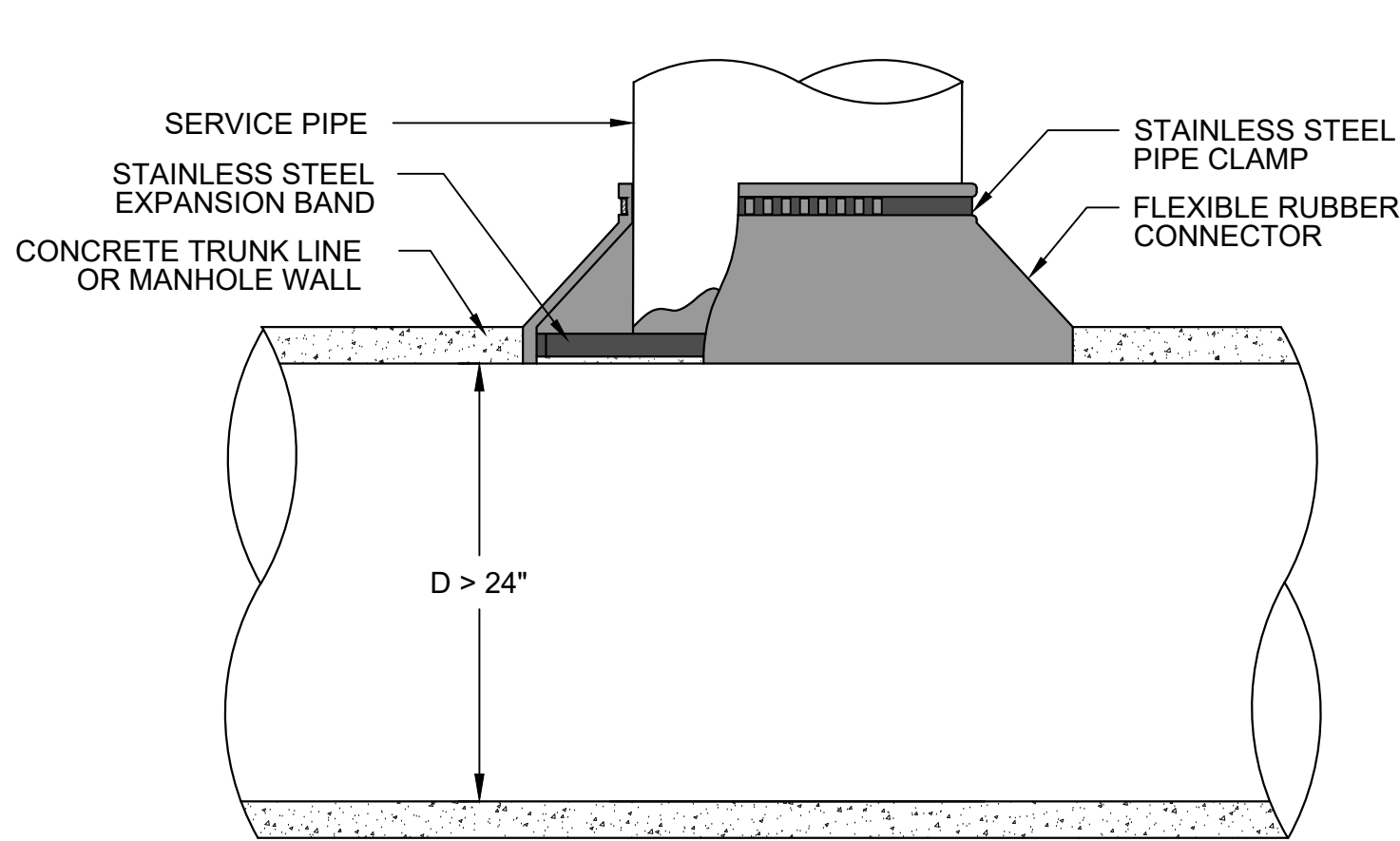
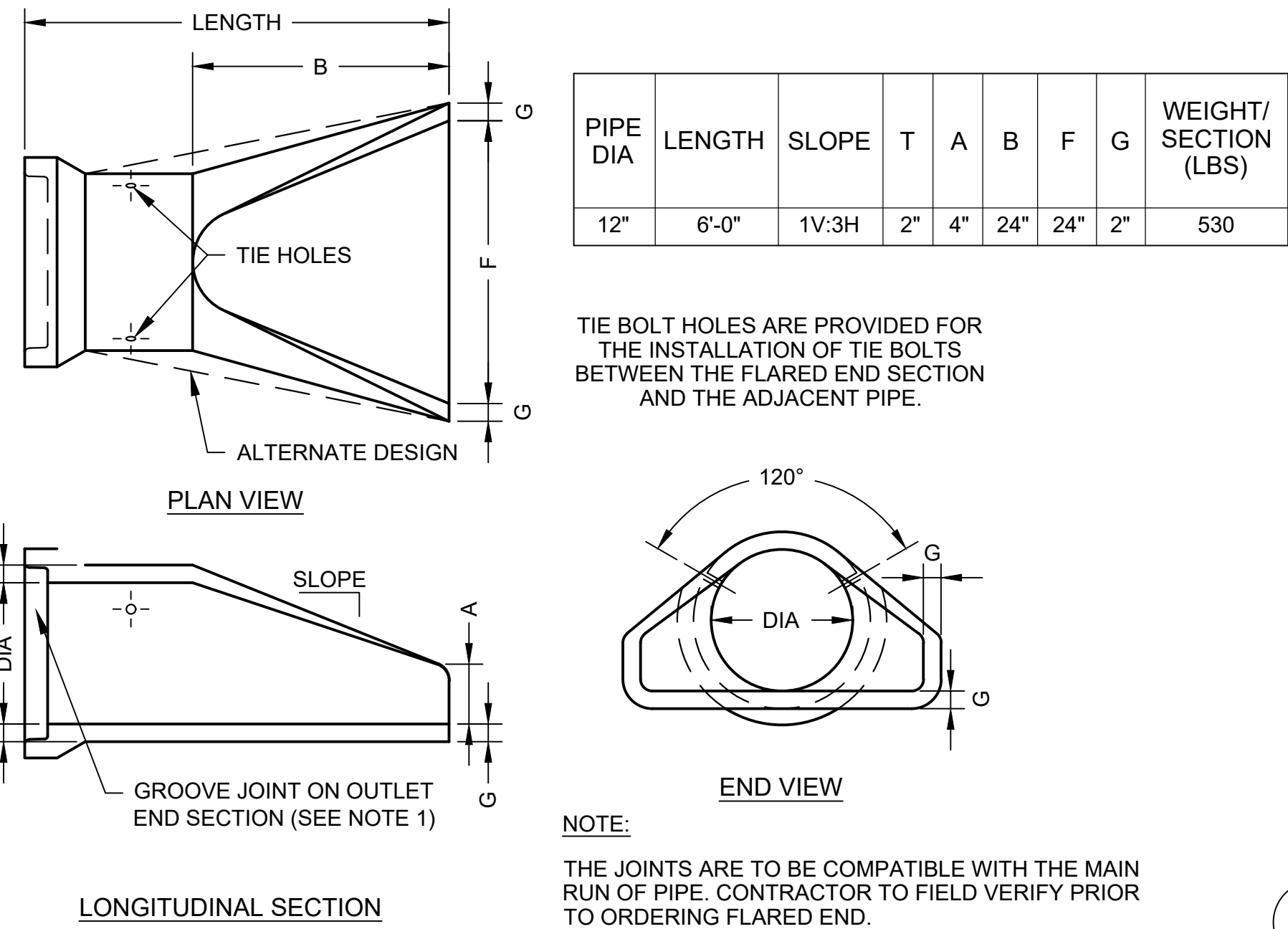
SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
NOTICE OF INTENT SUBMITTAL

Project:
Job Number: H-355321
Date: July 18, 2018
Drawn By: A.Keel
Designed By: H.Holmes, B.Neville, G.Johnson
Reviewed By: D.Bitko
Revisions:
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Sheet Title:
SITE PLAN
Sheet No:



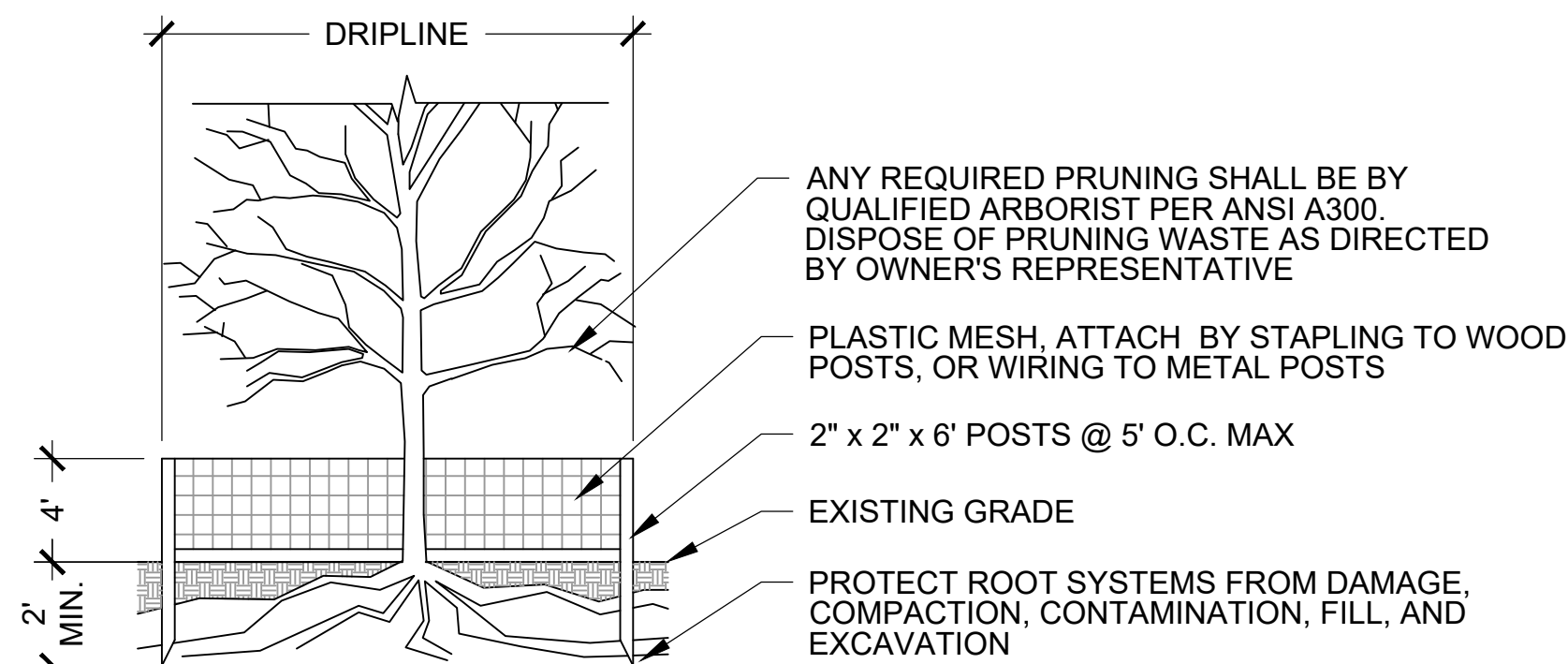
L-3



- NOTES:**
1. OPENING IN CONCRETE WALL SHALL BE CORED USING HIGH SPEED DIAMOND DRILL.
 2. ALL METAL FIXTURES SHALL BE OF STAINLESS STEEL.
 3. SERVICE LINE SHALL BE FLUSH WITH THE INSIDE OF THE CONCRETE PIPE OR WALL.
 4. IF TRUNK LINE DIAMETER IS LESS THAN 24" THEN A SADDLE TYPE CONNECTION WILL BE USED.

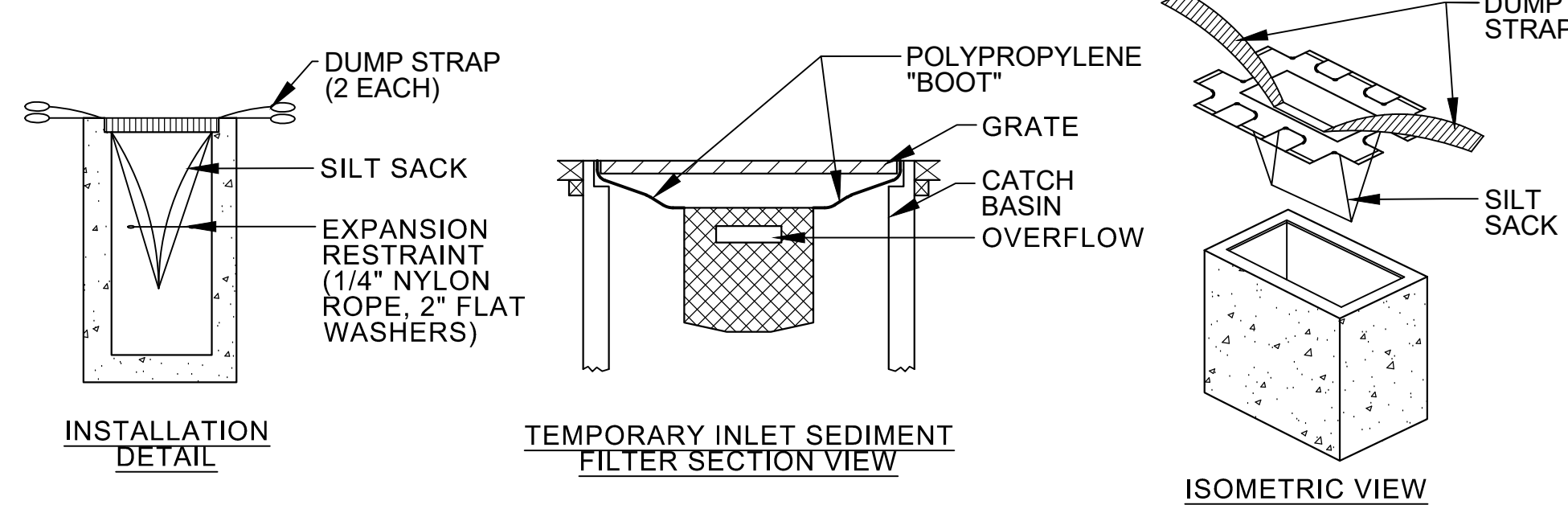
4 TYPICAL FIELD CONNECTION TO CONCRETE PIPE

SCALE: NTS



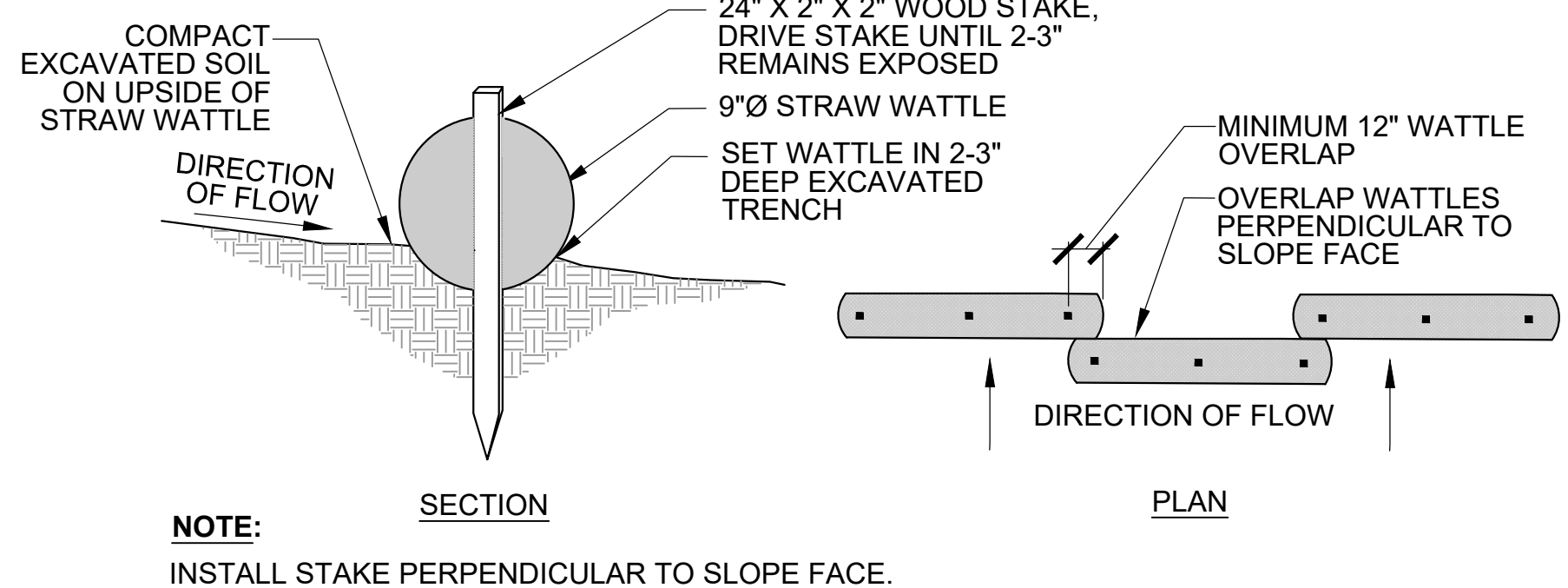
3 TREE PROTECTION FENCE

SCALE: NTS



2 SILTSACK

SCALE: NTS

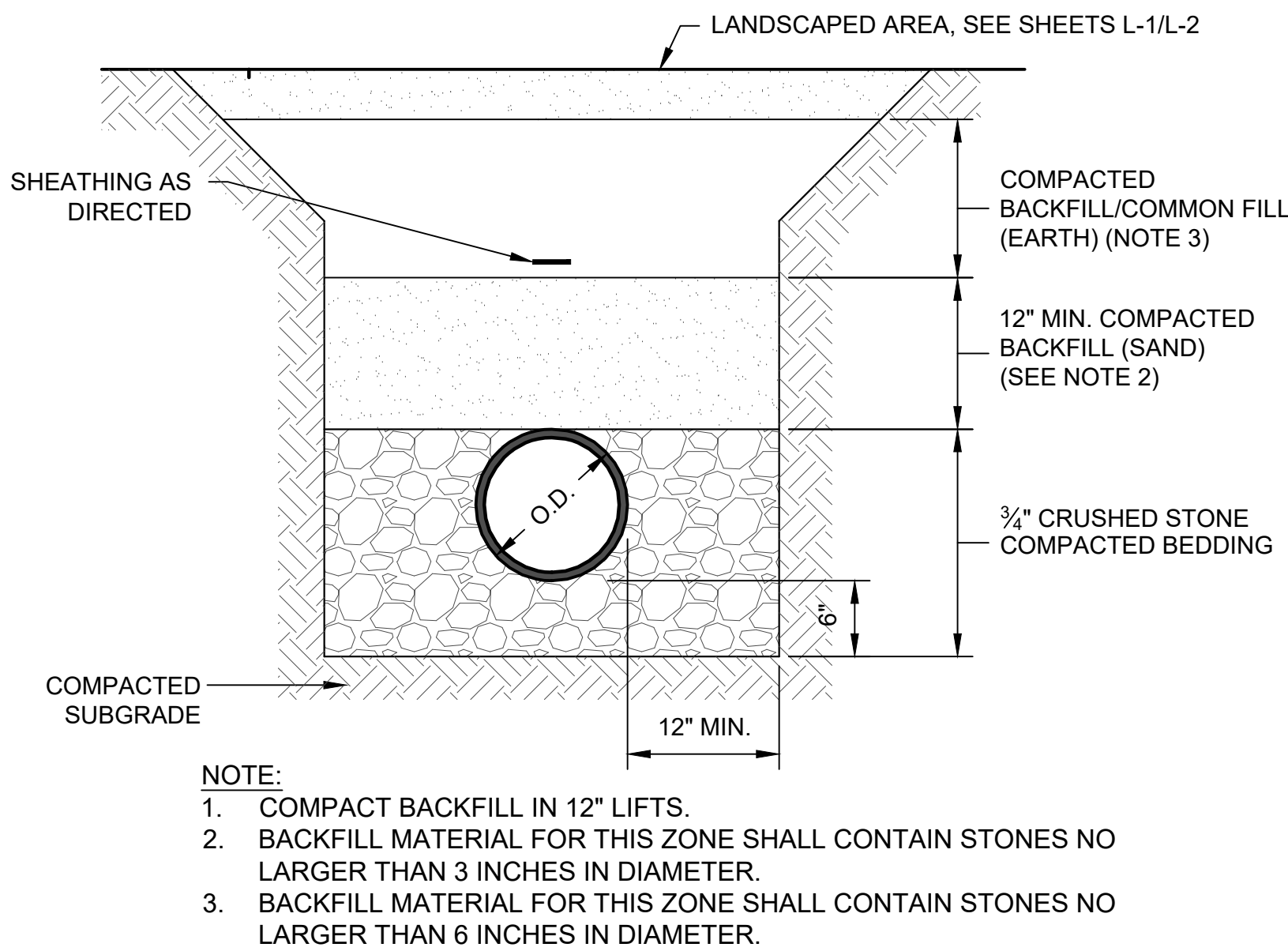


1 STRAW WATTLE

SCALE: NTS

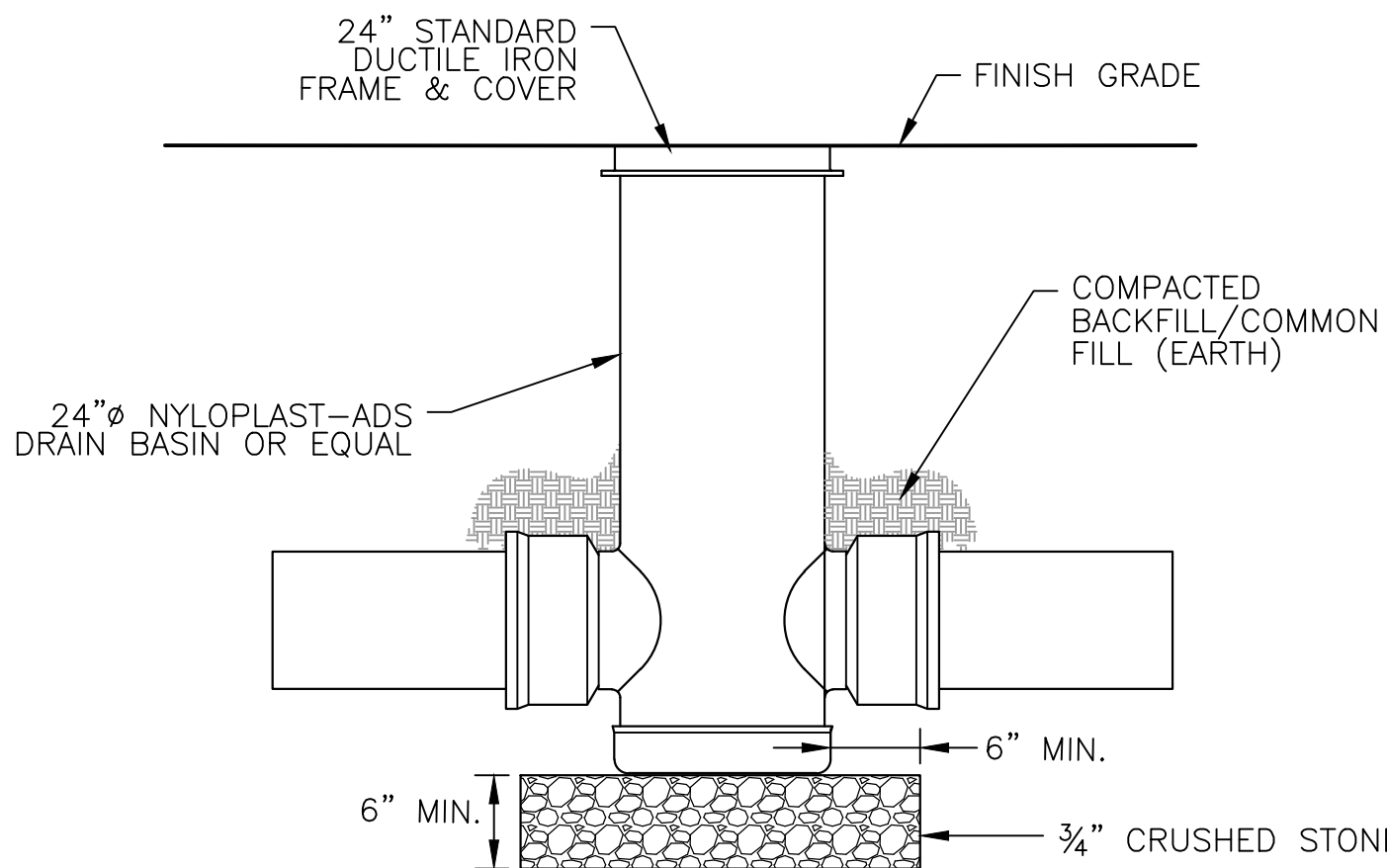
7 FLARED END OUTLET

SCALE: NTS



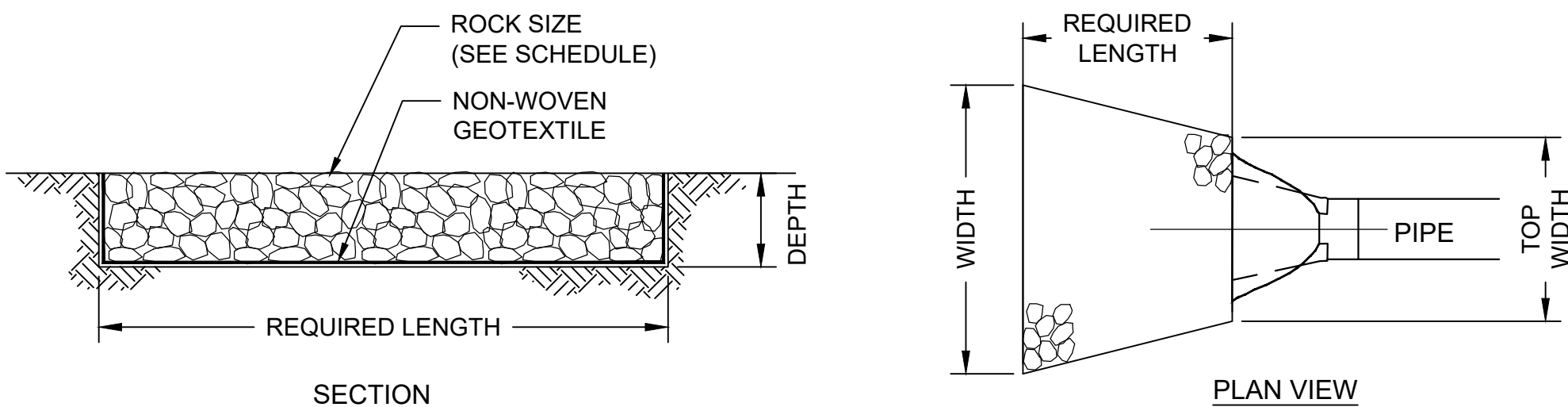
6 PIPE TRENCH

SCALE: NTS



5 DRAIN BASIN

SCALE: NTS



| ROCK APRON DESIGN SCHEDULE | | | | | | | |
|----------------------------|------------|----------------|----------------|-------------|------------|-----------|---------------------|
| DISCHARGE PIPE LOCATION | APRON TYPE | PIPE DIA. (IN) | TOP WIDTH (FT) | LENGTH (FT) | WIDTH (FT) | ROCK SIZE | REQUIRED DEPTH (FT) |
| SPY POND PARK (NORTH) | RIPRAP | 18 | 4.5 | 10 | 14.5 | D50=6" | 1.5 |
| SPY POND PARK (SOUTH) | RIPRAP | 18 | 4.5 | 10 | 14.5 | D50=6" | 1.5 |
| NEAR BOYS & GIRLS CLUB | RIPRAP | 12 | 3 | 11 | 14 | D50=6" | 1.5 |

8 ROCK APRON

SCALE: NTS

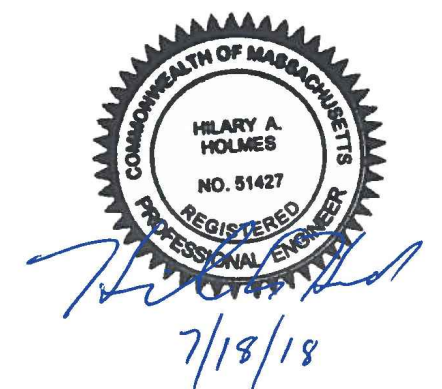
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SPY POND
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Drawn By:

A. Keel

Designed By:

H. Holmes, G. Johnson

Reviewed By:

H. Holmes, D. Bitsko

Revisions

Number:

Description:

Date:

Sheet Title:

SITE DETAILS

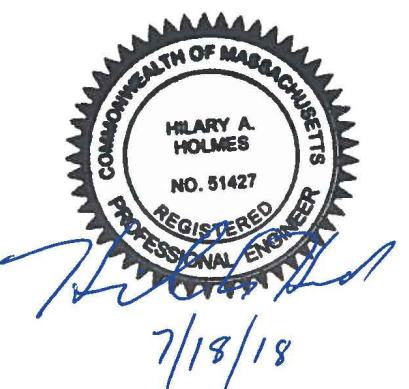
Sheet No:

L-4

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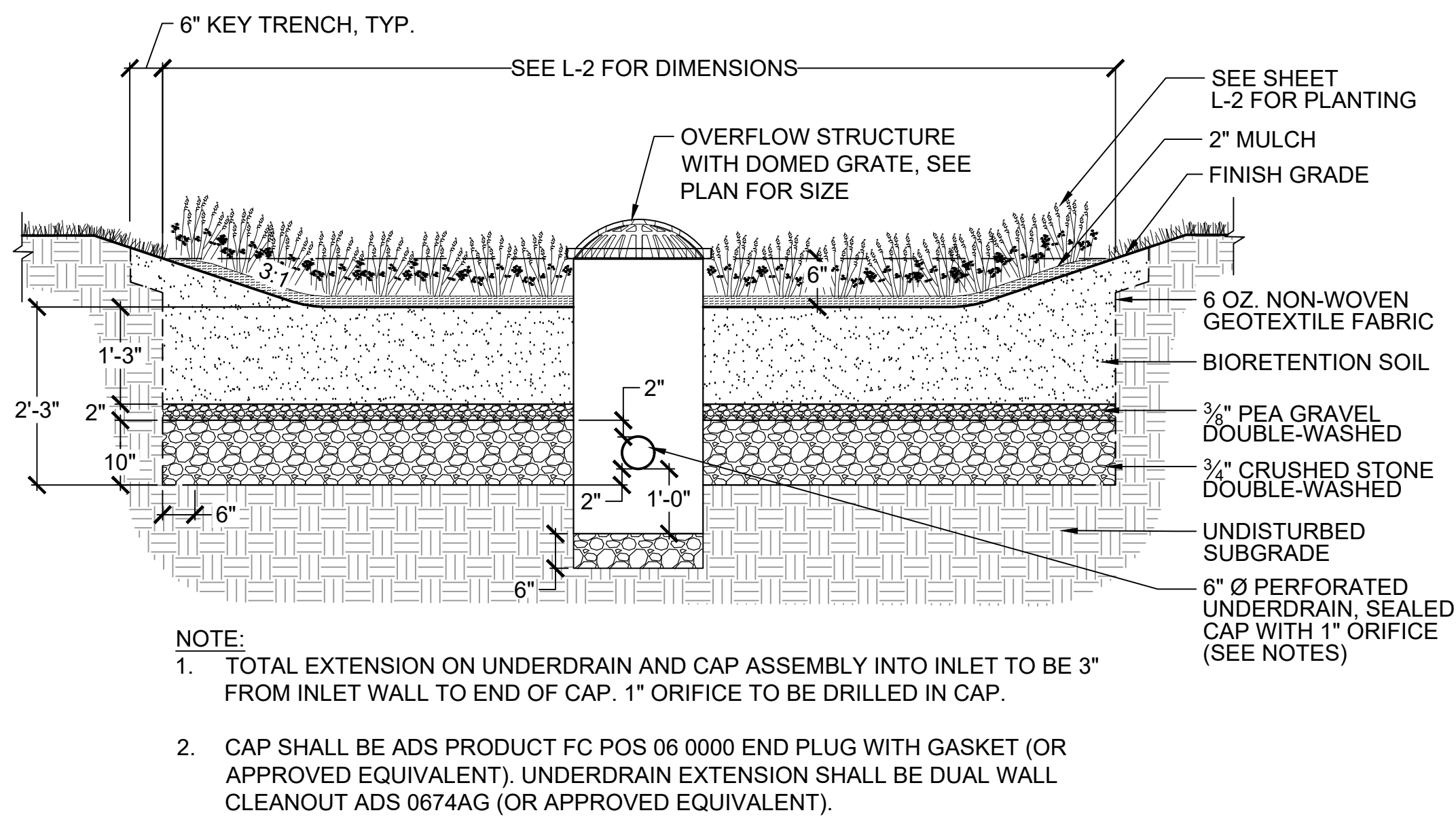
Job Number:
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A. Keel
Designed By:
H. Holmes, G. Johnson
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H. Holmes, D. Bitsko
Revisions
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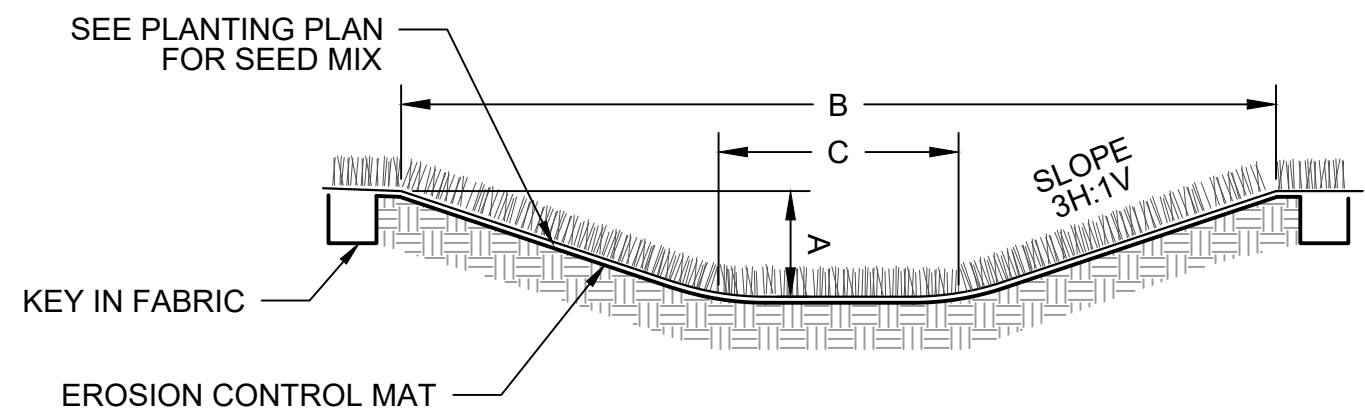
SITE DETAILS

Sheet No:

L-5



6 BIORETENTION BASIN
SCALE: NTS

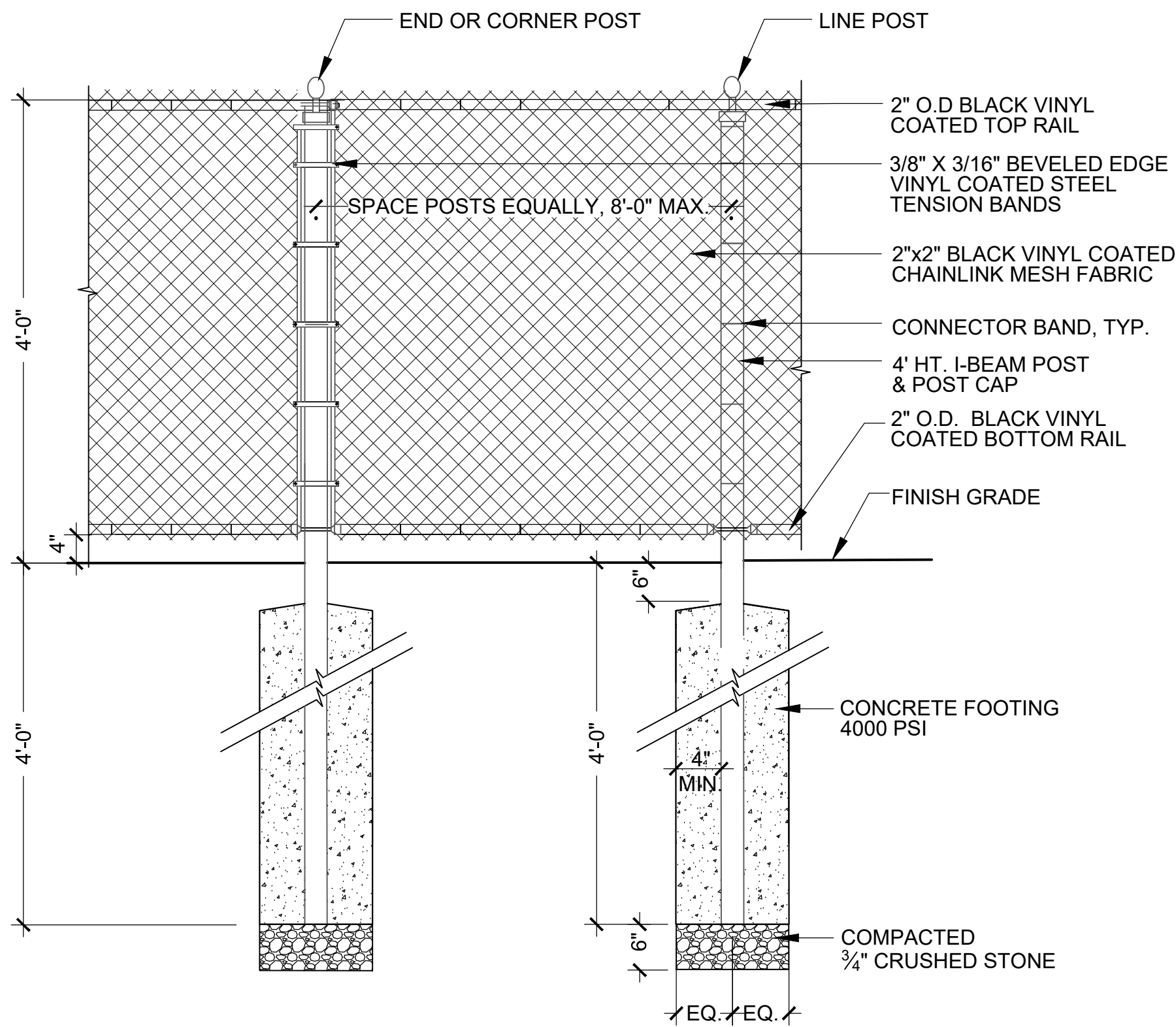


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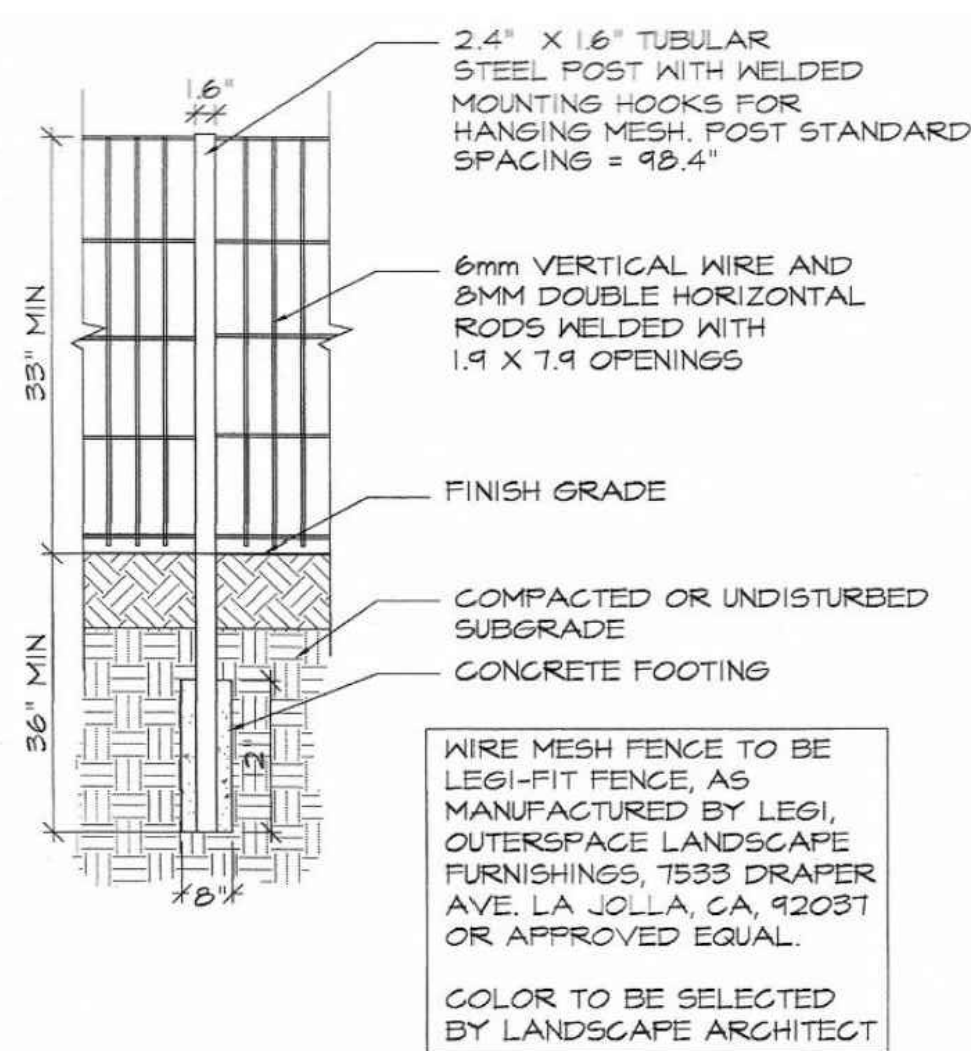
- SWALE LINING SHALL BE A BIODEGRADABLE EROSION CONTROL BLANKET SUCH AS BIONET® S150BN® OR EQUAL WITH A DESIGN PERMISSIBLE SHEAR STRESS UNVEGETATED VELOCITY OF 6 FT/S.
- SWALE SHALL BE VEGETATED PER PLANTING PLAN.

| SWALE DESIGN SCHEDULE | | | | | |
|-----------------------|-------------|---------------|----------------------|--------------------------|------------------------|
| SWALE LOCATION | LENTGH (FT) | SLOPE (FT/FT) | A MIN. DEPTH (FT) | B MIN. TOP WIDTH (FT) | C BOTTOM WIDTH (FT) |
| SCANNELL FIELD | 320 | 0.005 | VARIES, SEE PLAN | VARIES, SEE PLAN | 1.0 |
| SPRING VALLEY | 50 | 0.14 | 0.5 | 6.0 | 3.0 |

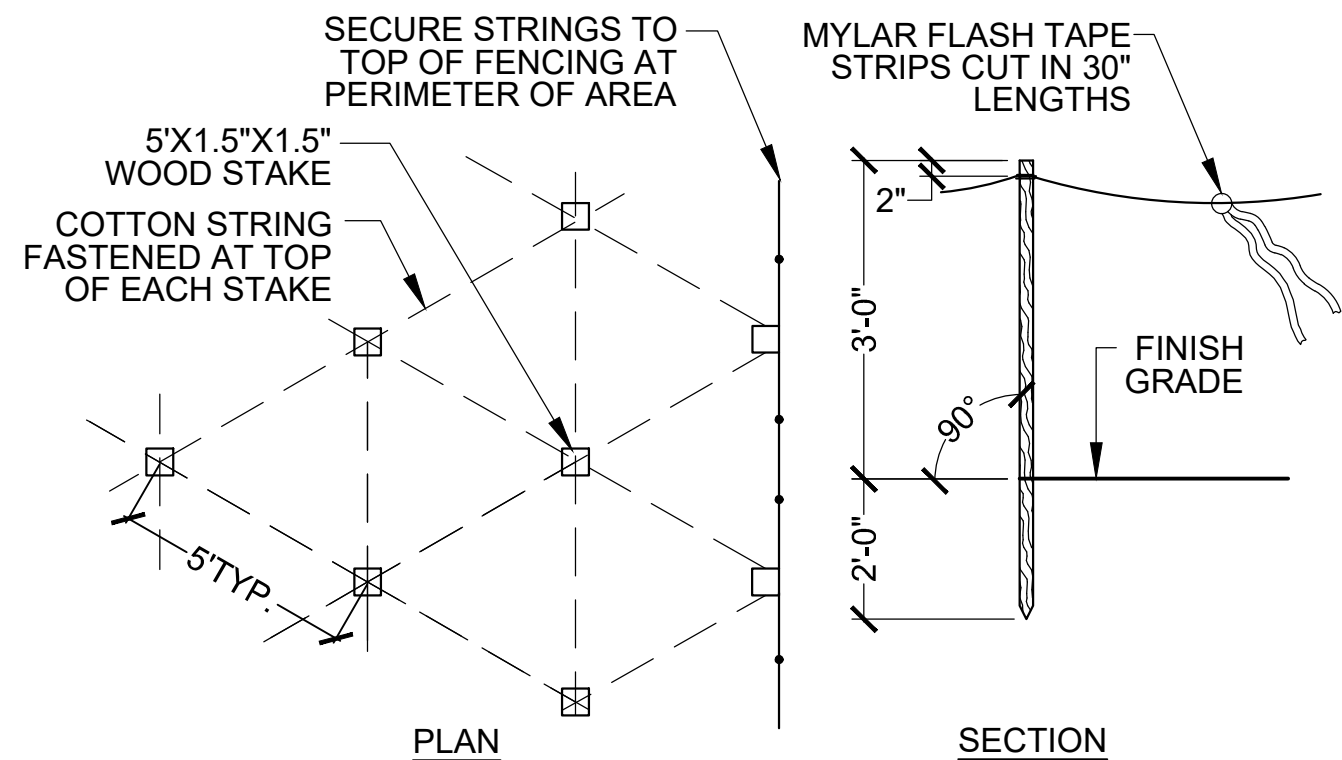
5 VEGETATED SWALE
SCALE: NTS



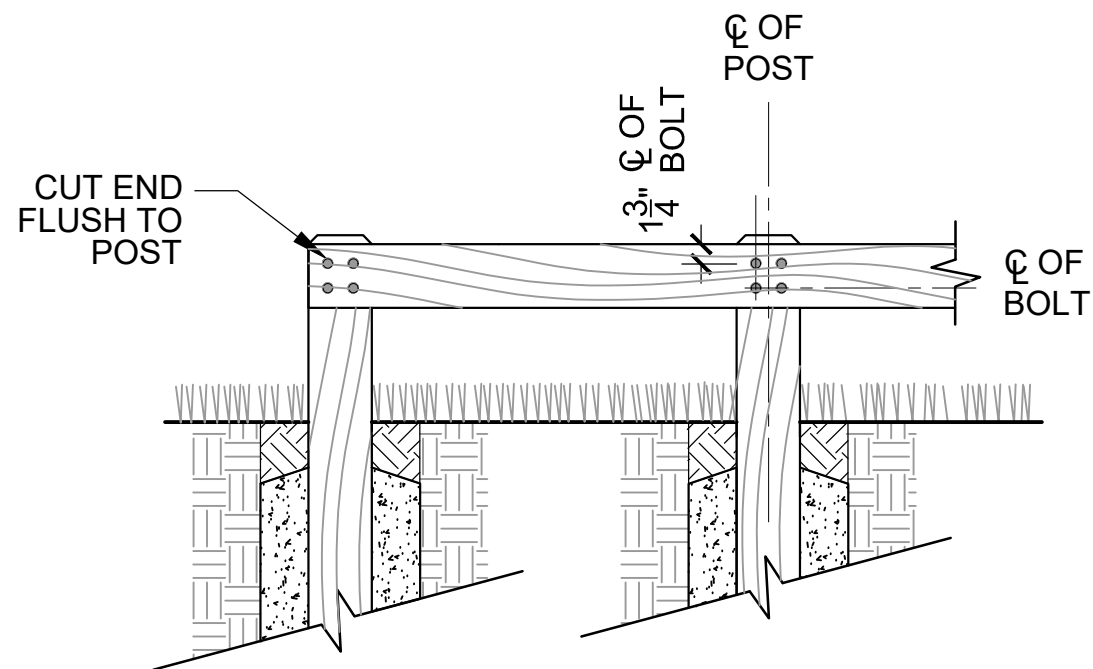
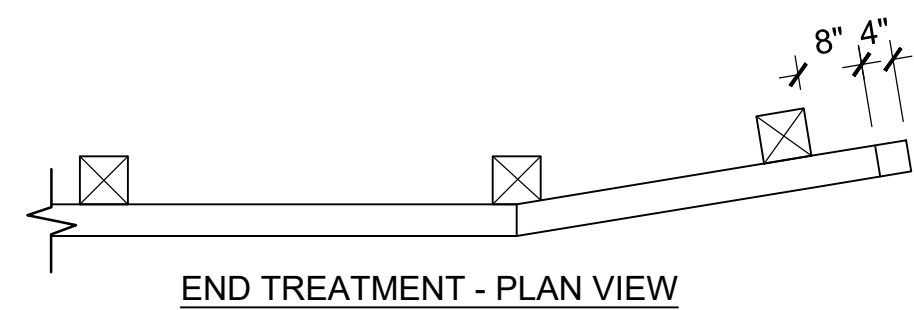
4 CHAIN LINK FENCE (4' HT.)
SCALE: NTS



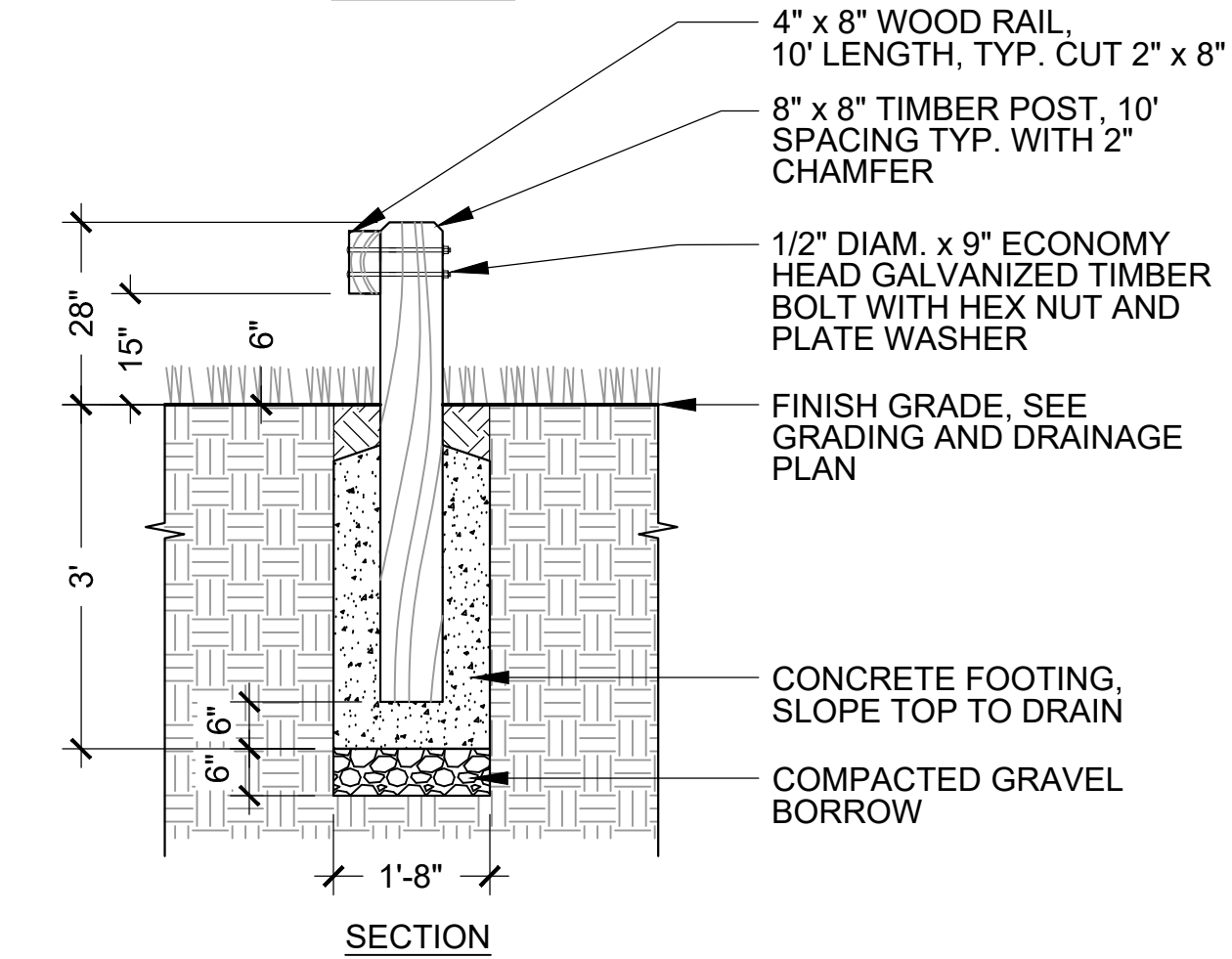
3 PARK FENCE
SCALE: NTS



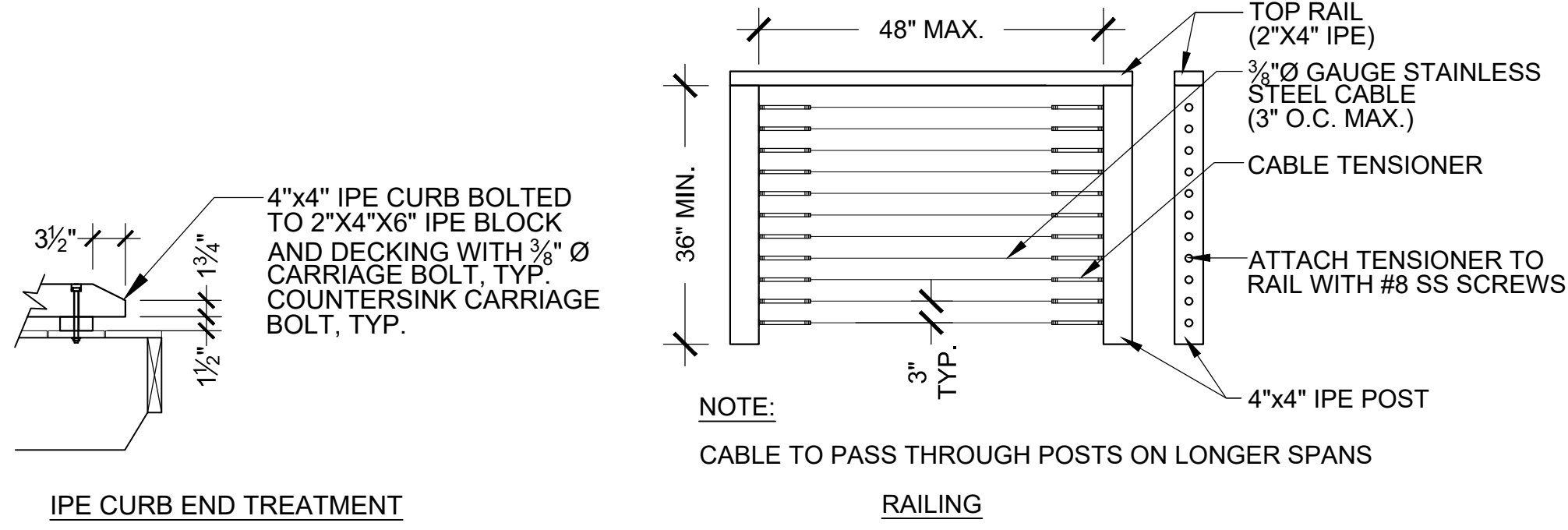
2 GOOSE DETERRENT FENCE
SCALE: NTS



ELEVATION

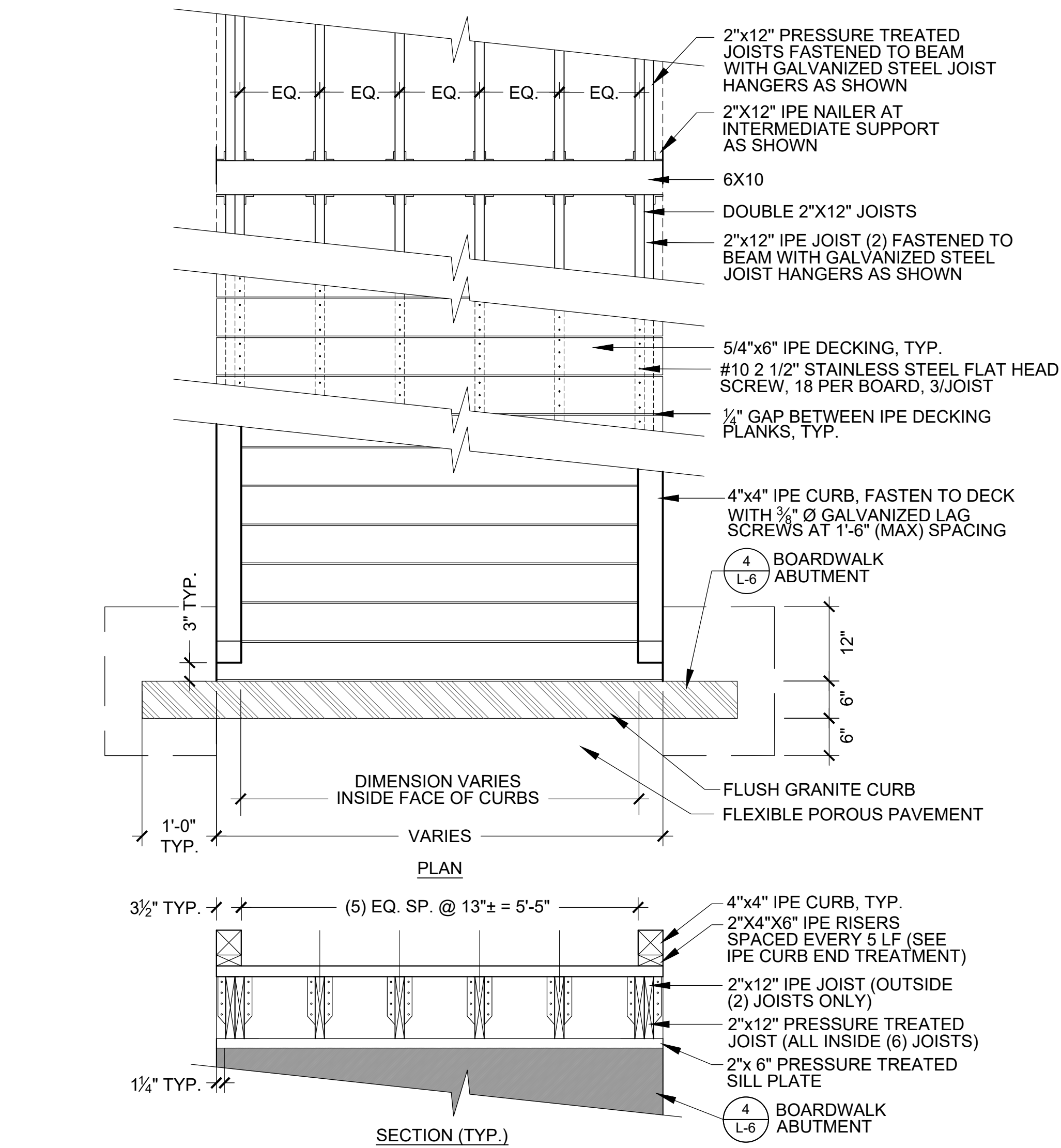


1 TIMBER GUIDERAIL
SCALE: NTS



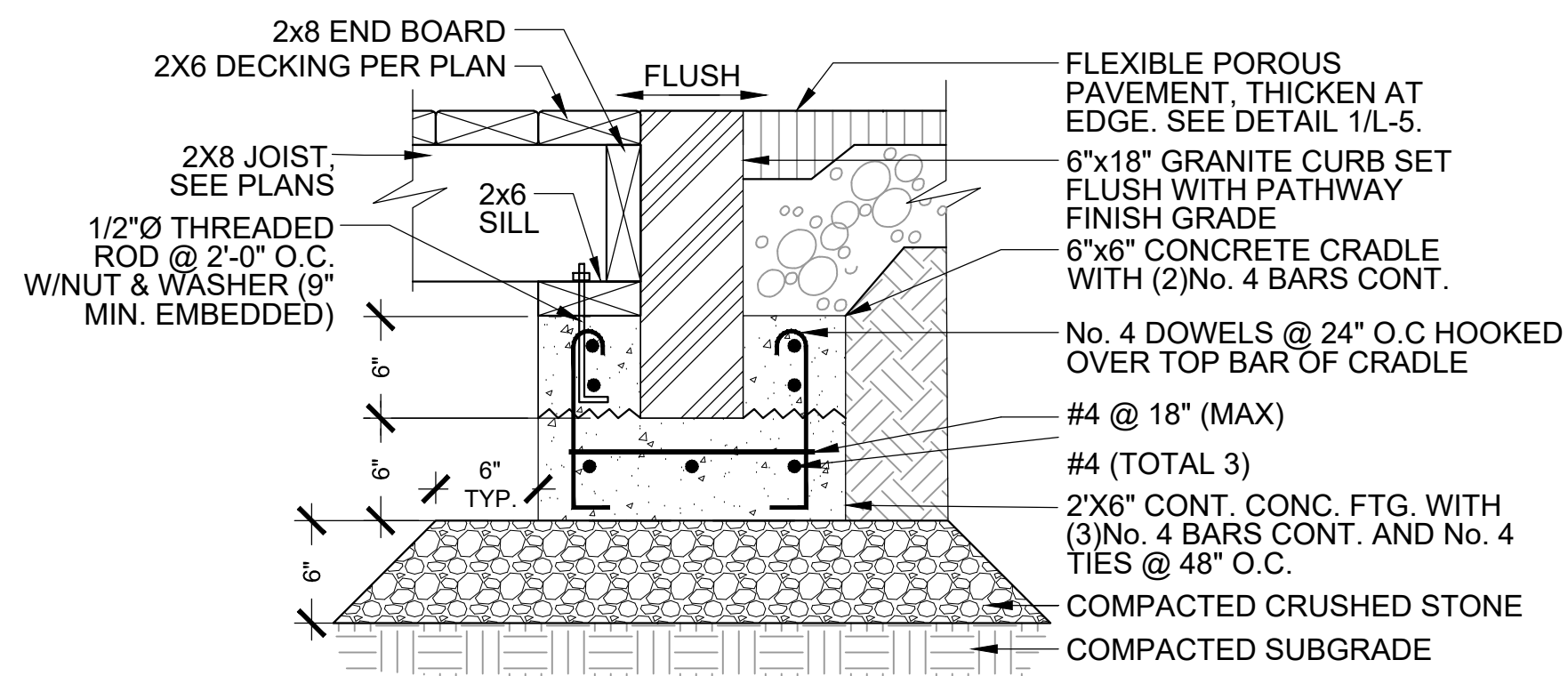
TIMBER NOTES:

1. DECKING AND CURBS TO BE IPE AS SPECIFIED.
2. JOISTS AND BEAMS TO BE PRESSURE TREATED.
3. ALL WOOD DIMENSIONS ARE NOMINAL.
4. CONNECTORS TO BE GALVANIZED SIMPSON-TIE OR APPROVED EQUAL.



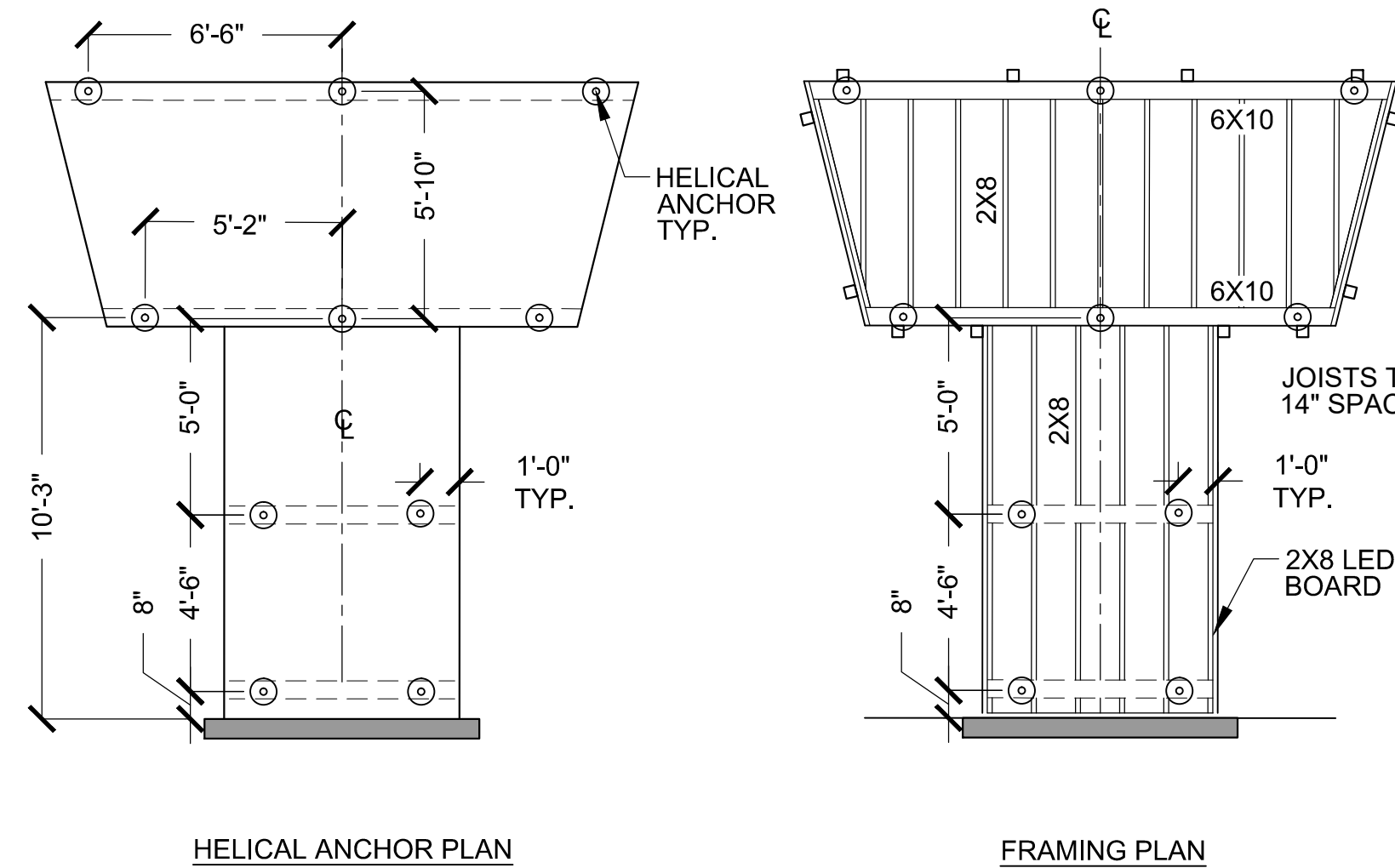
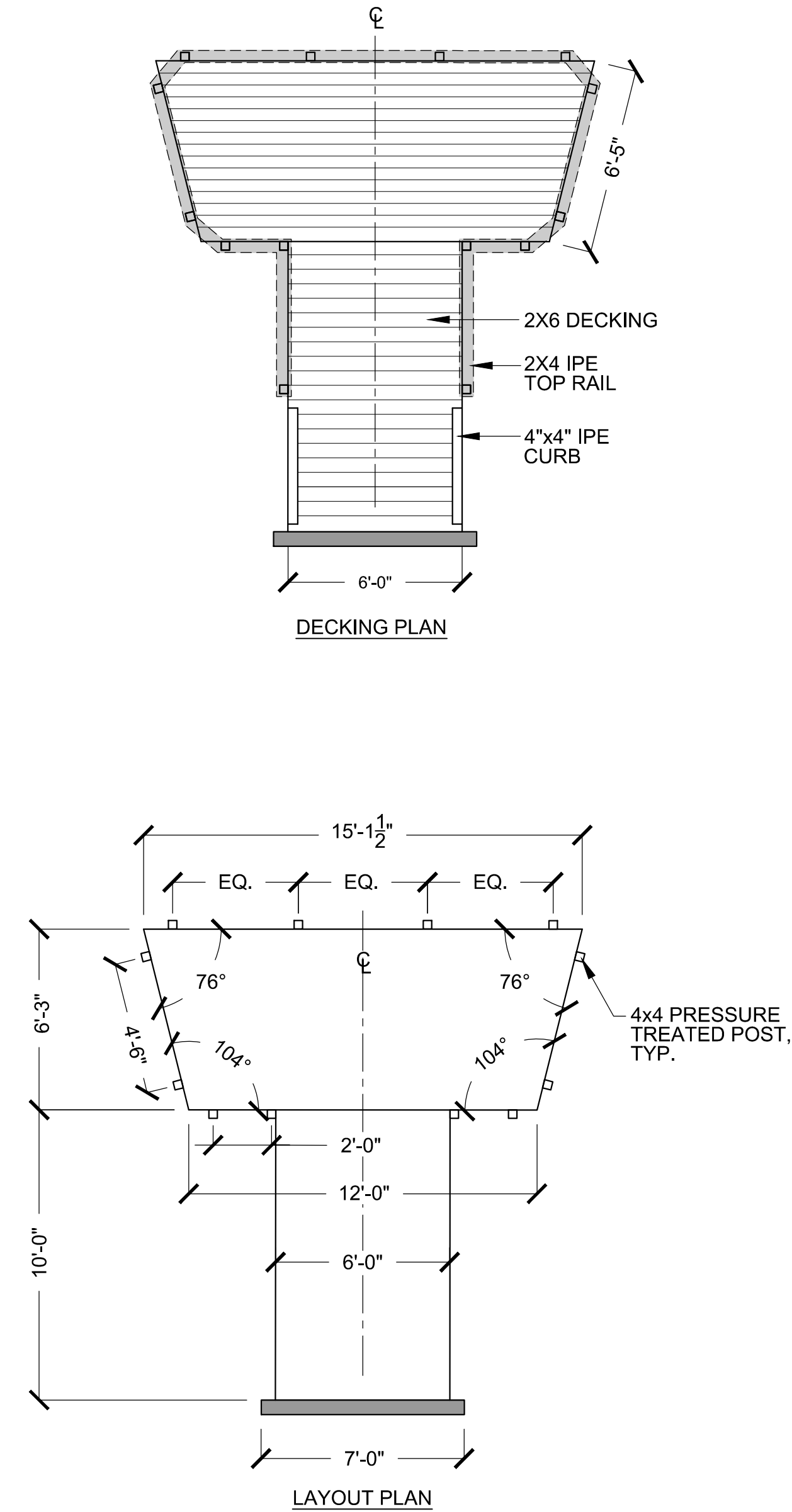
5 BOARDWALK STRUCTURE

SCALE: NTS



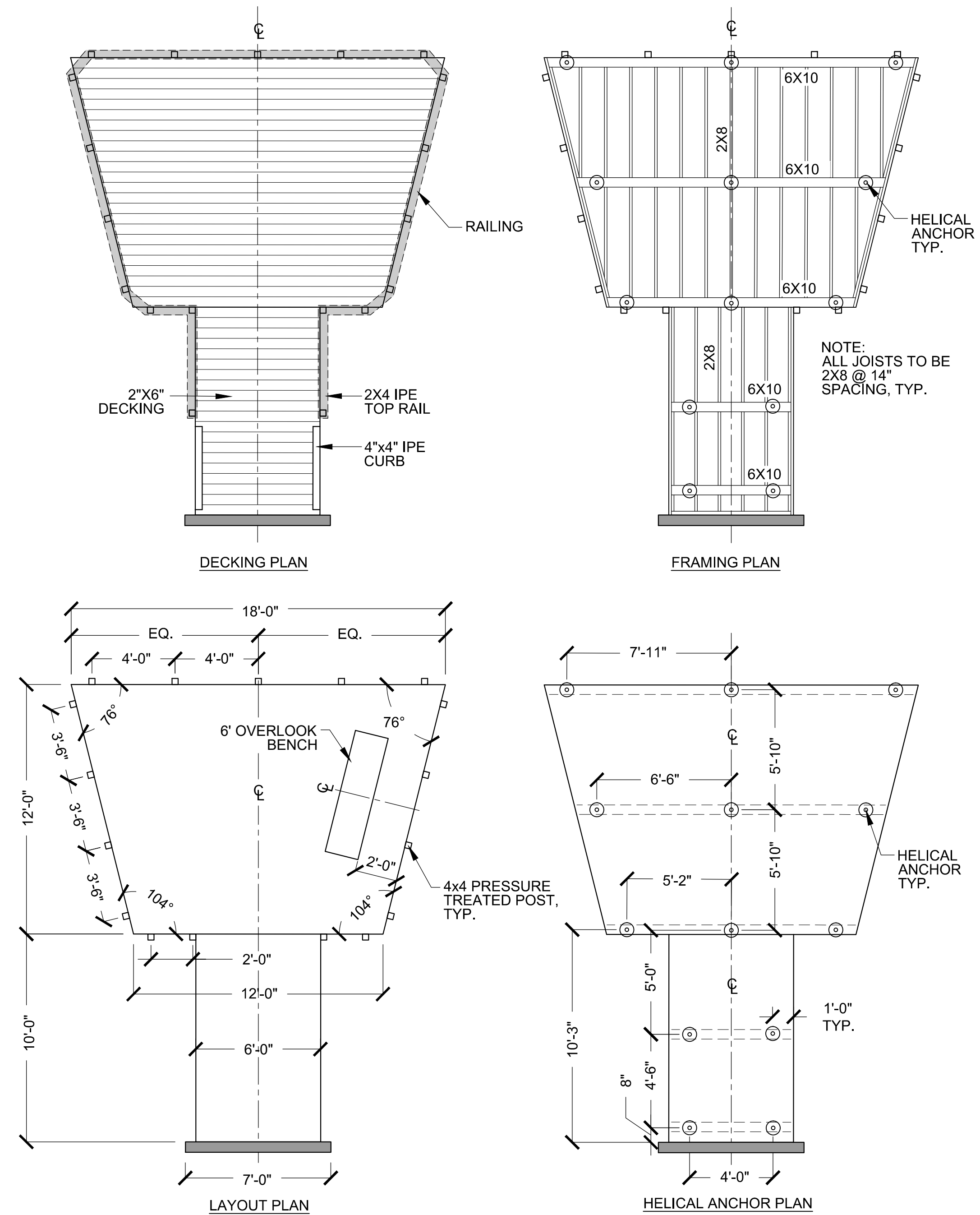
4 BOARDWALK ABUTMENT

SCALE: NTS



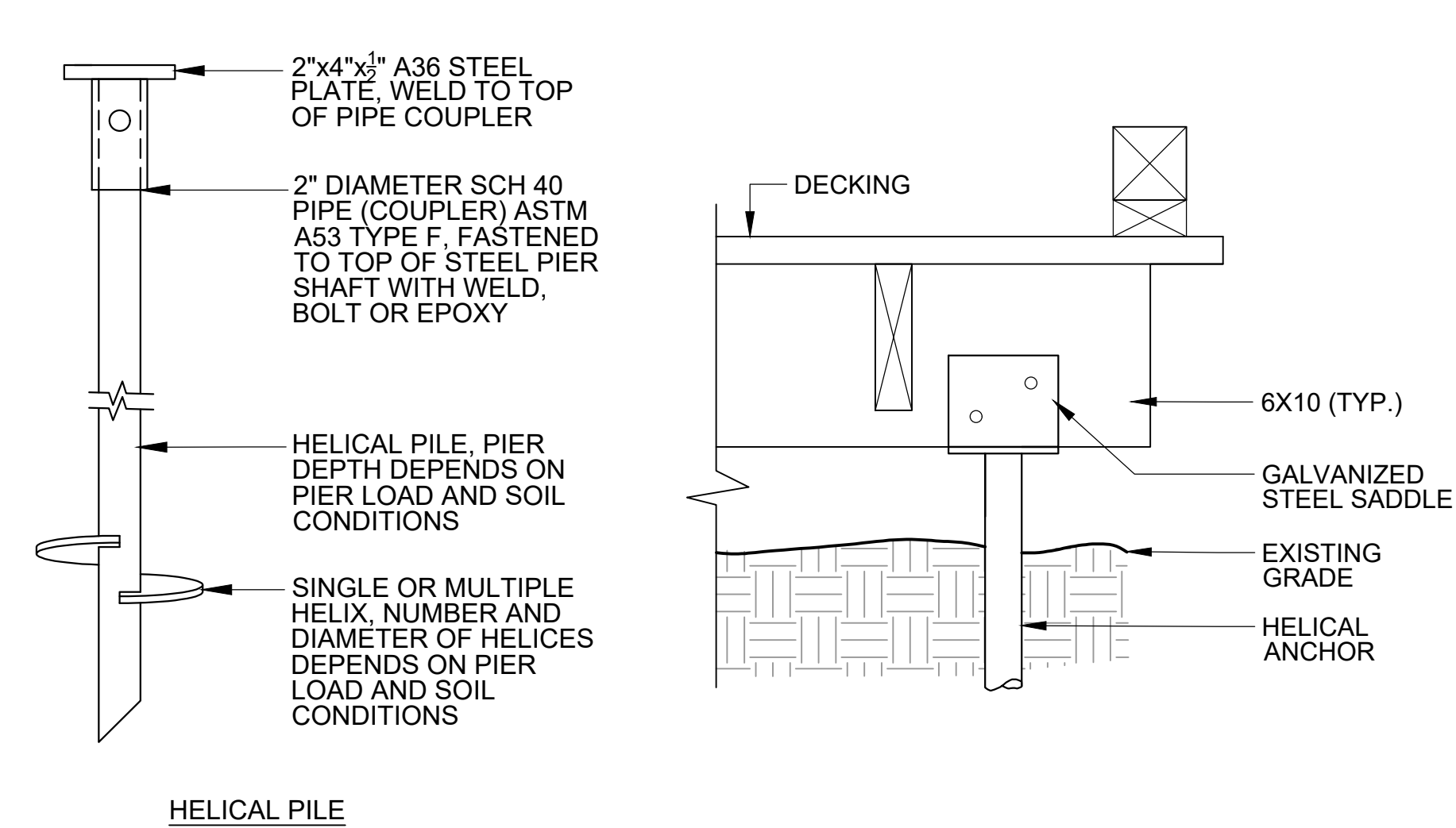
3 TIMBER OVERLOOK (NORTH)

SCALE: NTS



2 TIMBER OVERLOOK (SOUTH)

SCALE: NTS



1 HELICAL PILE

SCALE: NTS

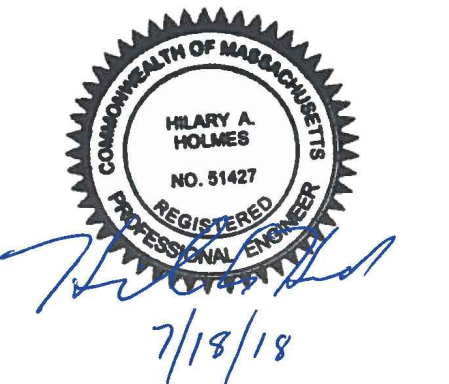
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Reviewed By:

H. Holmes, D. Bitsko

Revisions

Number: Description: Date:

Sheet Title:

SITE DETAILS

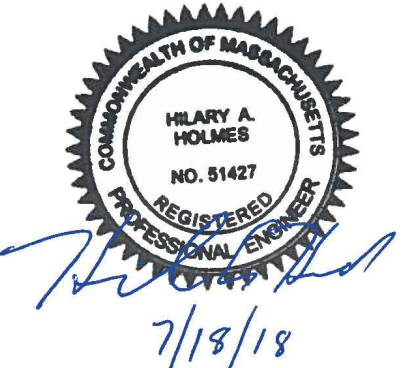
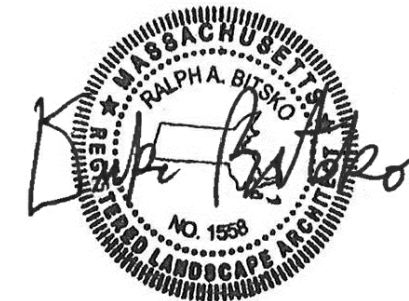
Sheet No:

L-6

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Town of Arlington Park &
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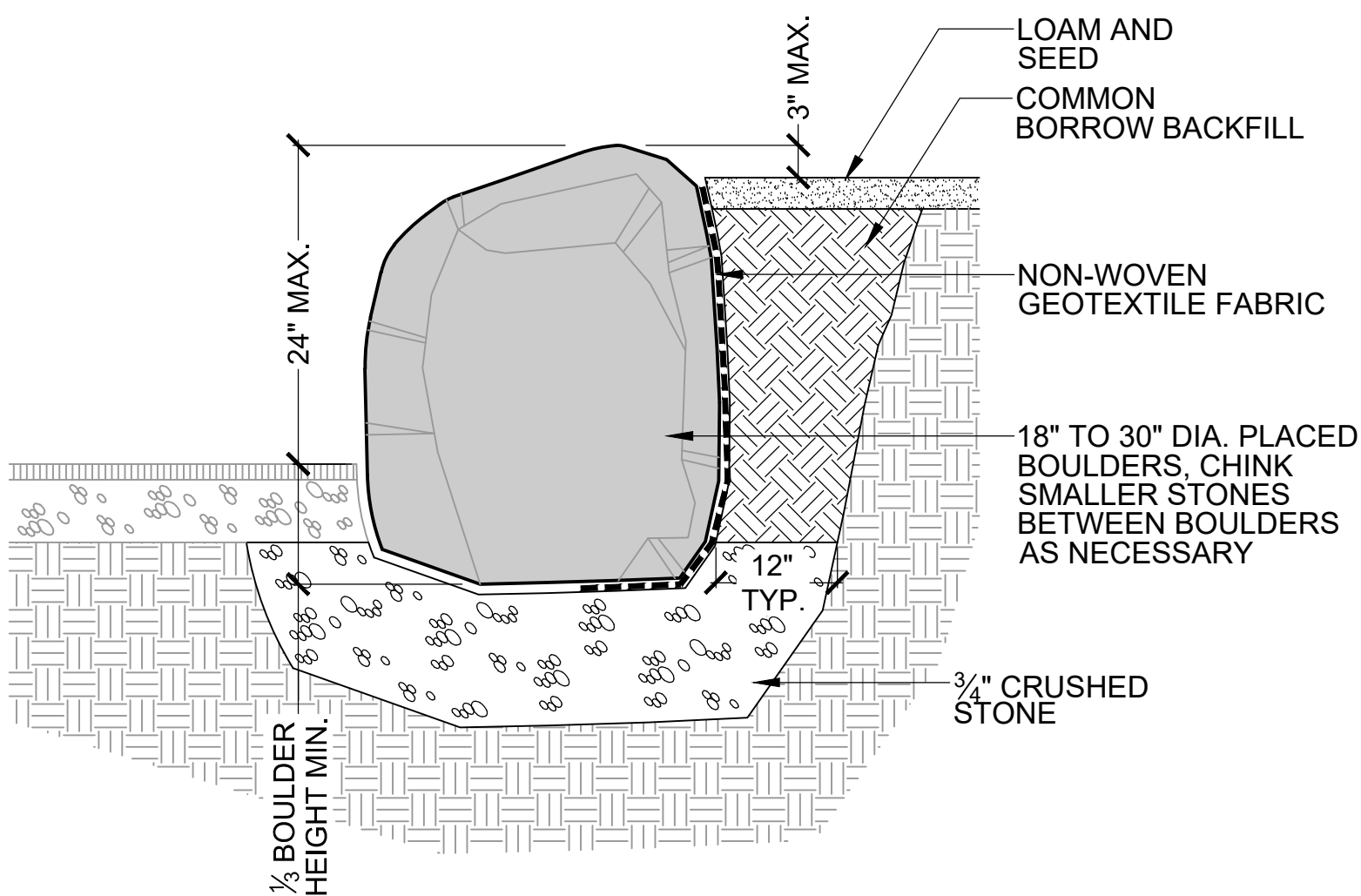
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SITE DETAILS

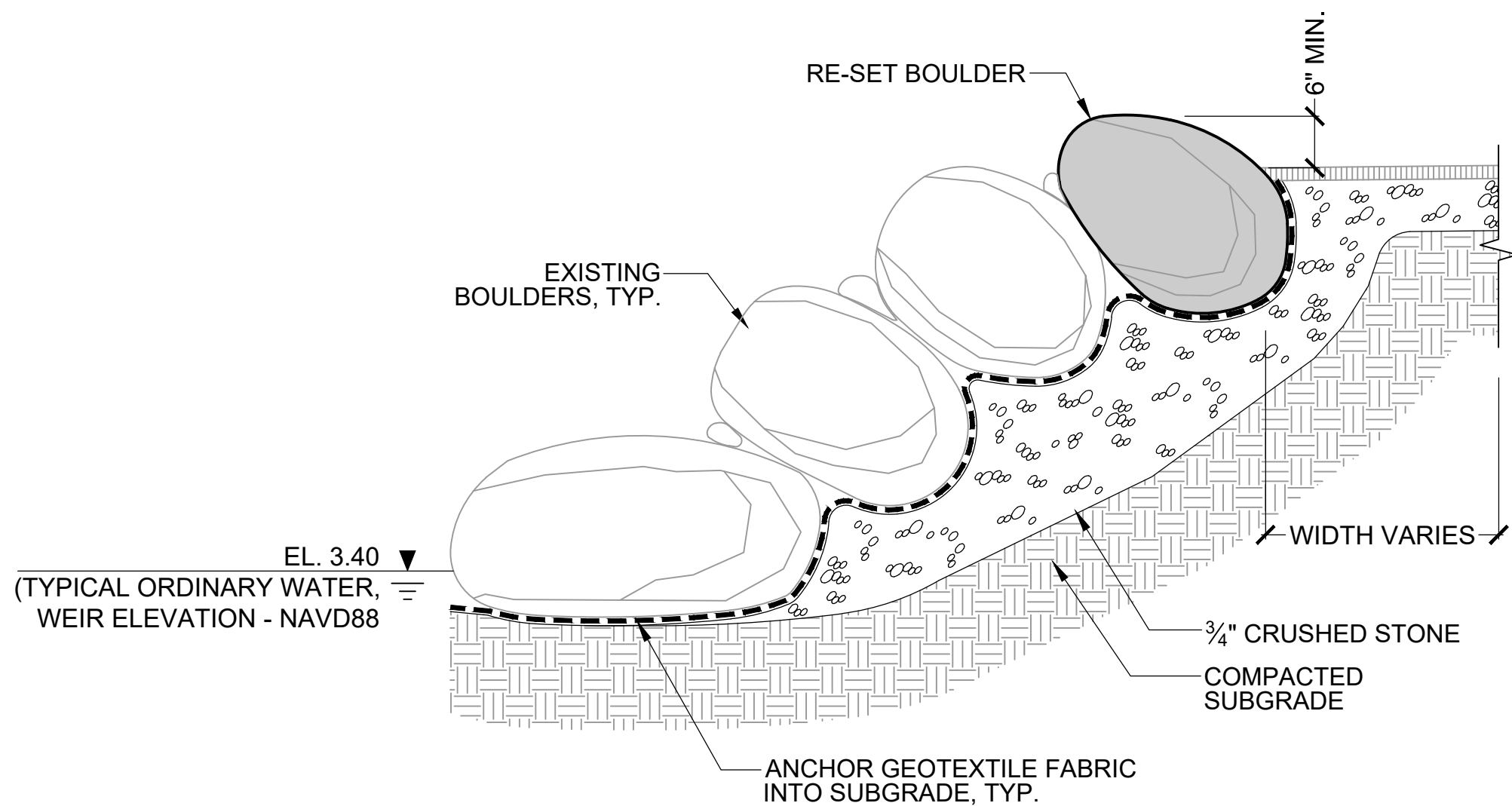
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L-7



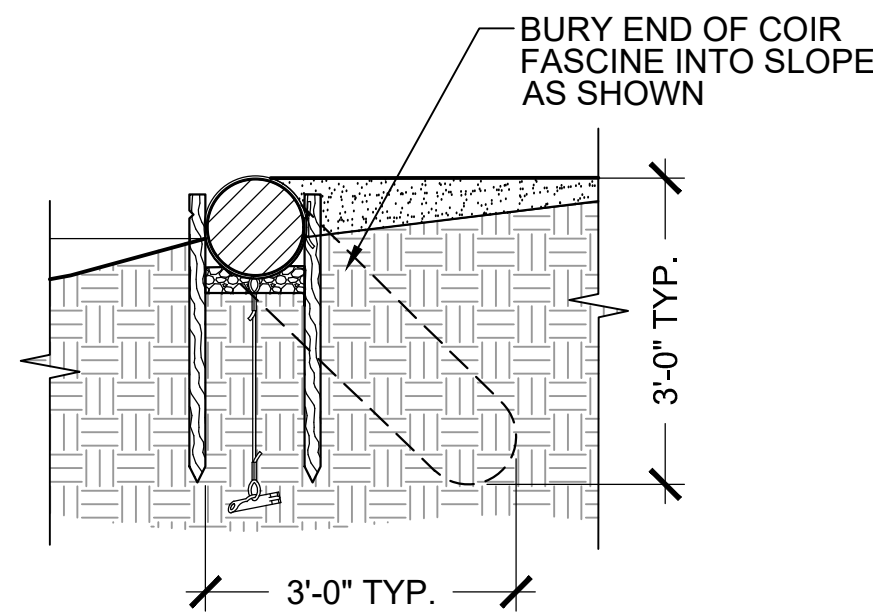
6 BOULDER RETAINING WALL - SCANNELL FIELD

SCALE: NTS

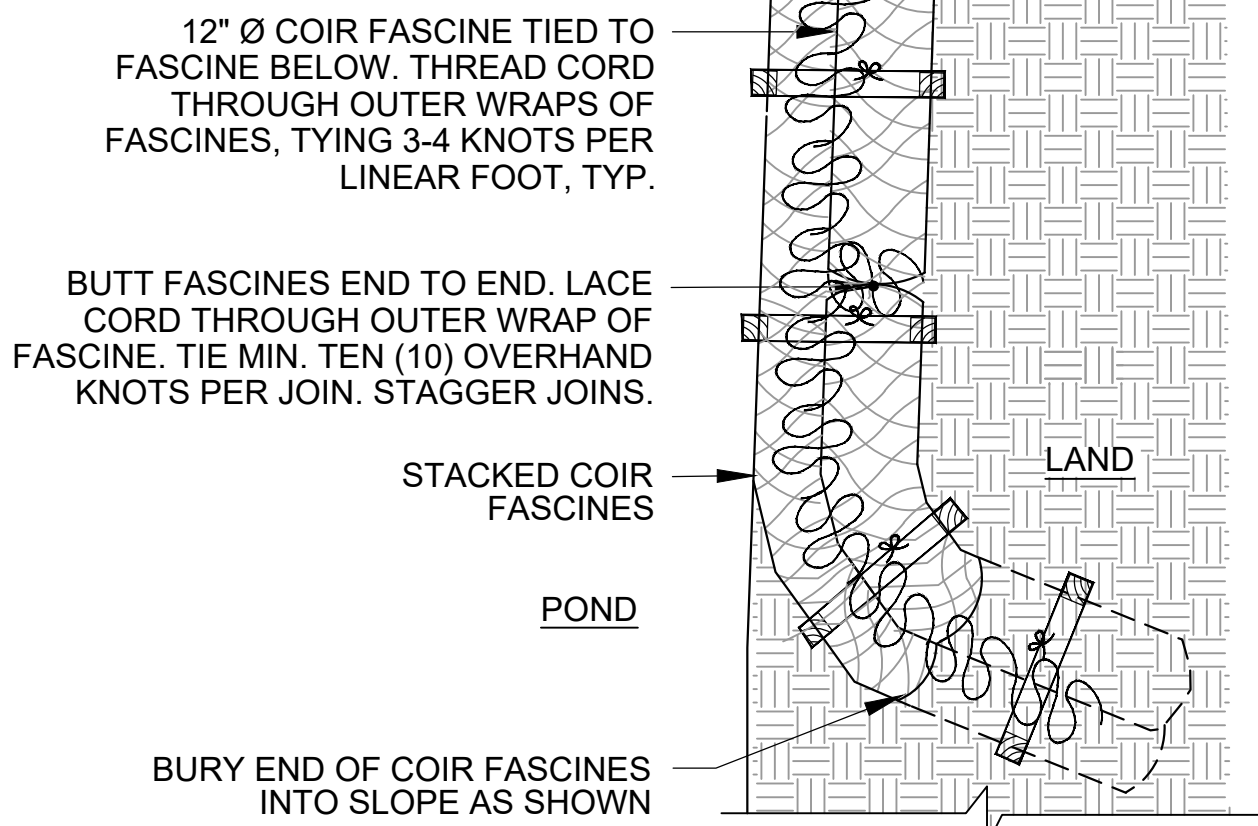


5 STONE SLOPE -SCANNELL FIELD

SCALE: NTS



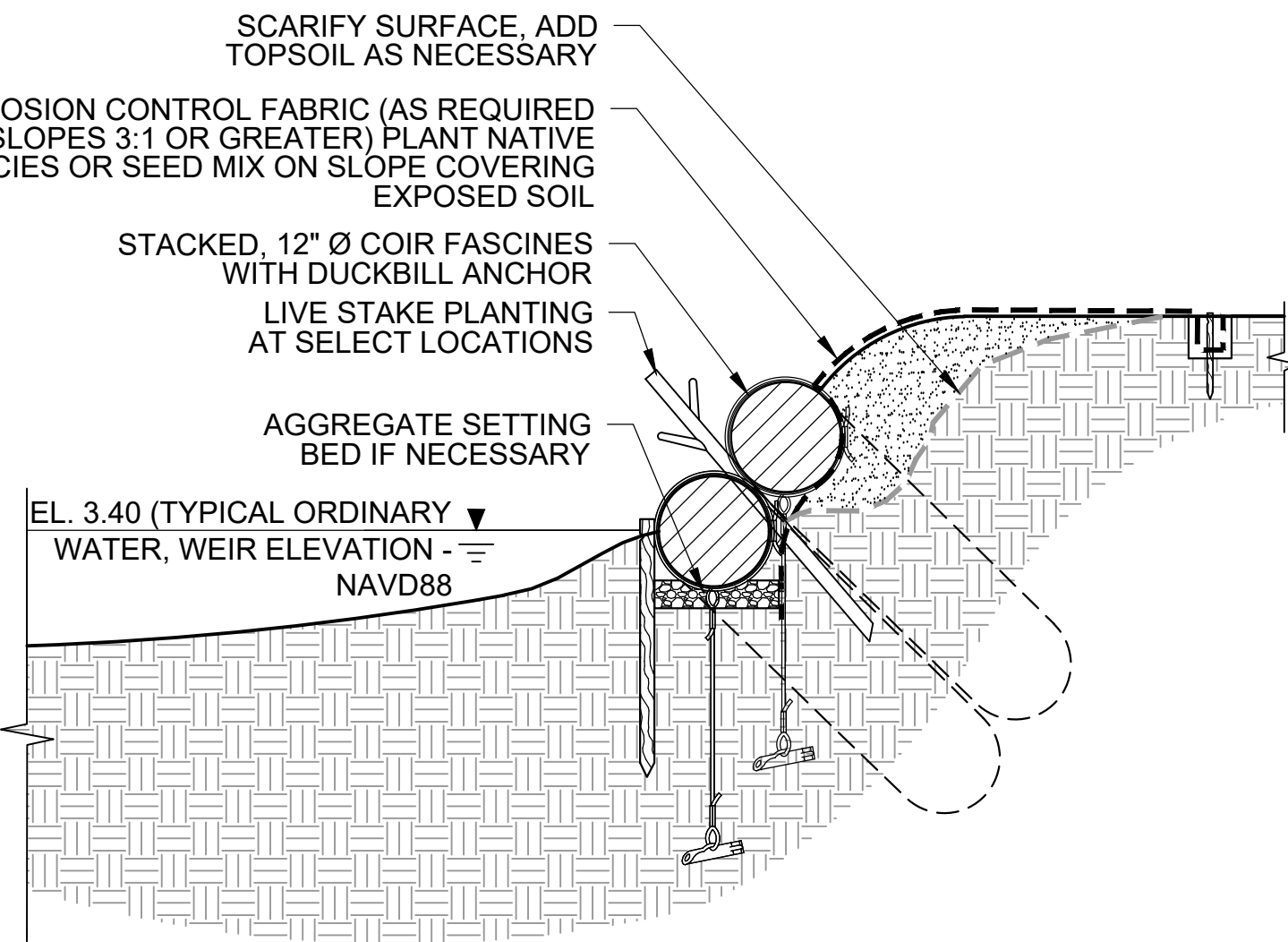
SECTION



PLAN

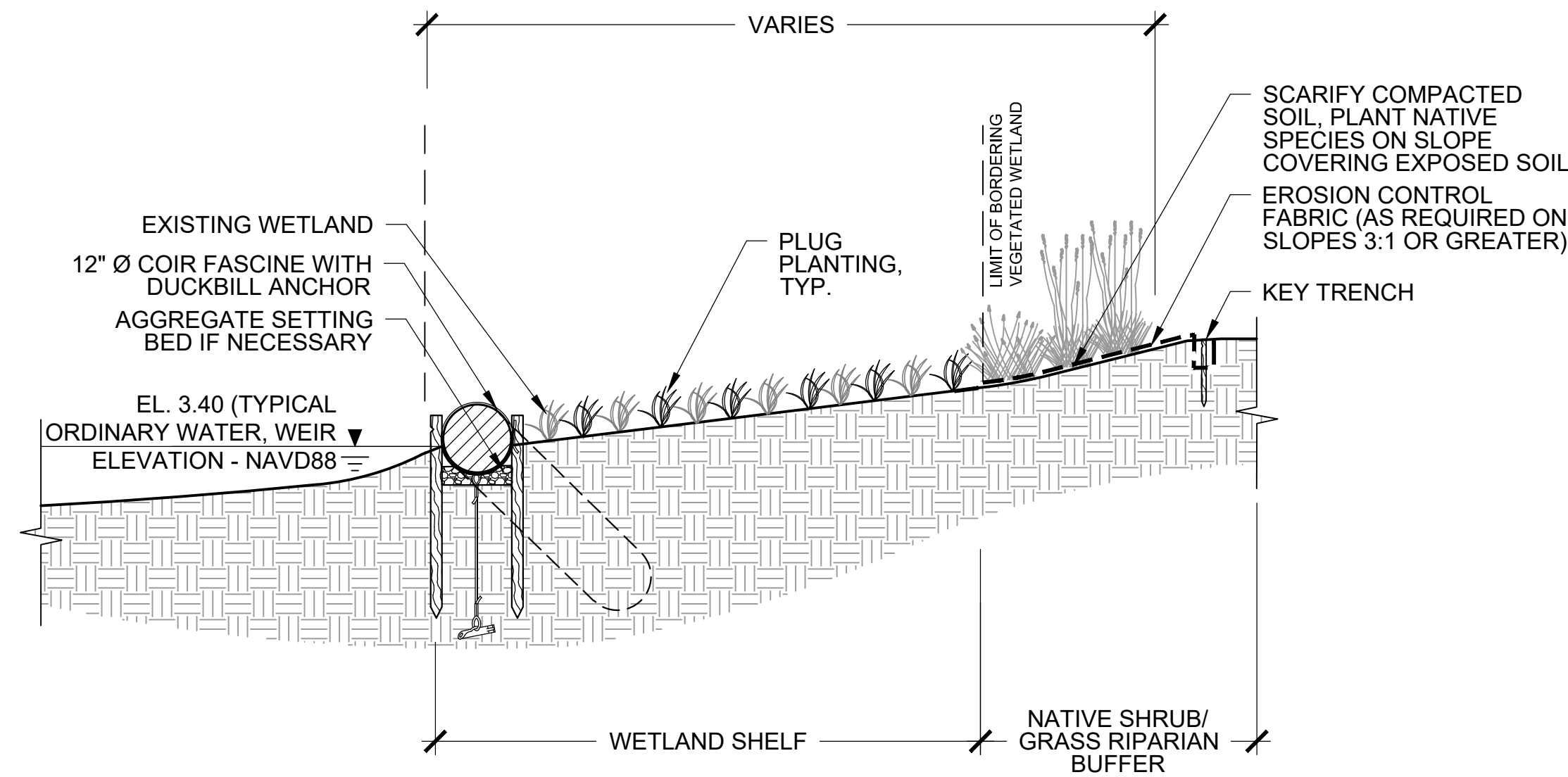
4 COIR FASCINE END TREATMENT

SCALE: NTS



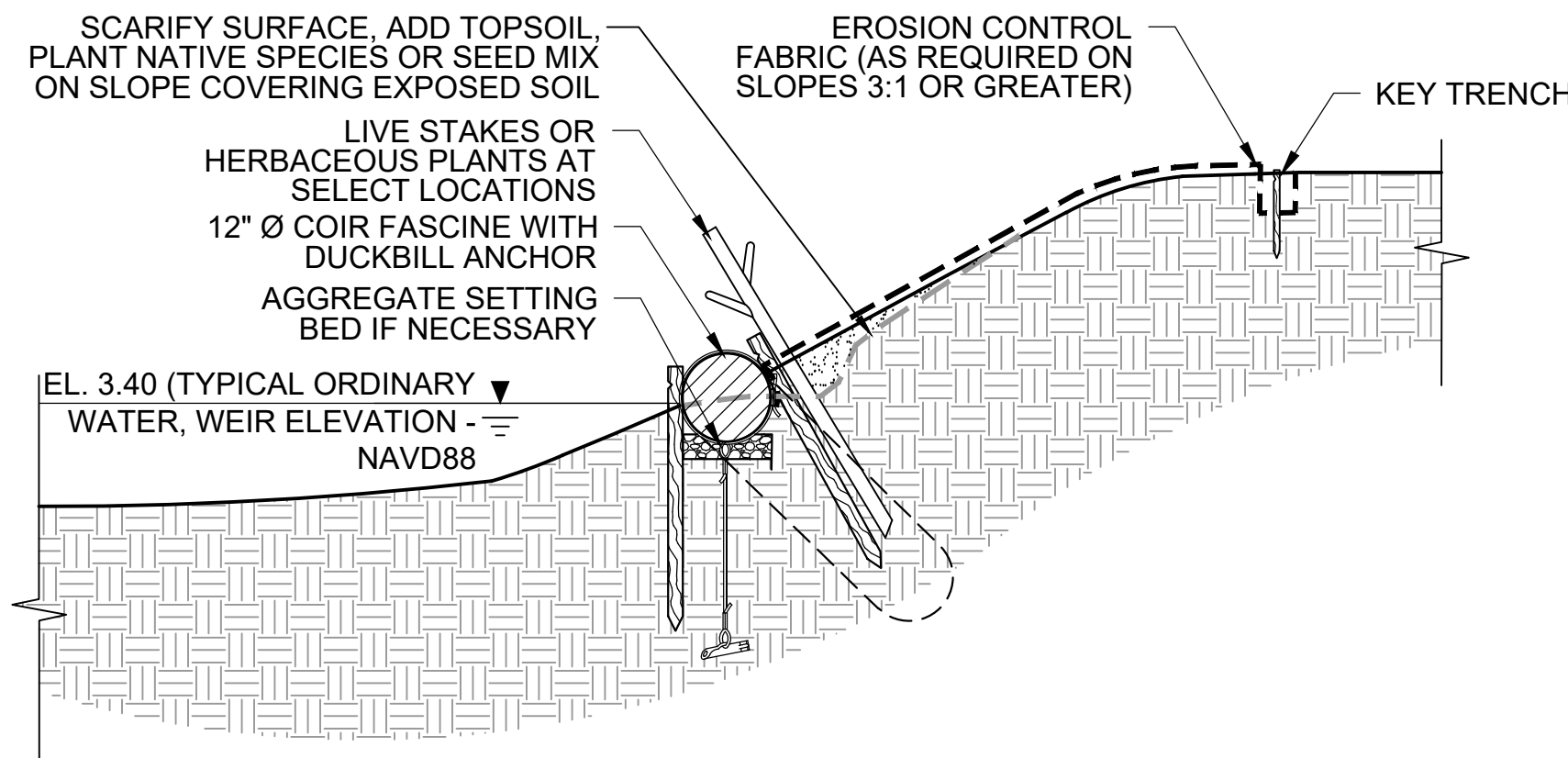
3 TREATMENT C: STACKED COIR FASCINE

SCALE: NTS



2 TREATMENT B: SINGLE COIR FASCINE AT WETLAND

SCALE: NTS



1 TREATMENT A: SINGLE COIR FASCINE

SCALE: NTS

| TOTAL QTY | Area 1 Spy Pond | Area 2 Scannell Field | Area 3 Boys & Girls Club | Area 4 Spring Valley | SIZE | ID | Species (synonym) | Common Name |
|--|--------------------|--------------------------|-----------------------------|-------------------------|------------|-----|--------------------------------------|----------------------------|
| TREES/ TUBELINGS & 2' HT. CONTAINERS | | | | | | | | |
| 5 | | 2 | 3 | | tubeling | AR | <i>Acer rubrum</i> | red maple |
| 2 | | 2 | | | tubeling | BF | <i>Benthamidia (Cornus) florida</i> | flowering dogwood |
| 2 | | 2 | | | tubeling | BA | <i>Betula alleghaniensis</i> | yellow birch |
| 5 | | 2 | 3 | | tubeling | BL | <i>Betula lenta</i> | black (sweet) birch |
| 2 | | 2 | | | tubeling | CC | <i>Carpinus caroliniana</i> | American hornbeam |
| 2 | | 2 | | | tubeling | JV | <i>Juniperus virginiana</i> | red cedar |
| 6 | | 3 | 3 | | tubeling | NS | <i>Nyssa sylvatica</i> | black gum |
| 5 | | 2 | 3 | | 2' ht. | OV | <i>Ostrya virginiana</i> | hop-hornbeam |
| 1 | | 1 | | | 2' ht. | QA | <i>Quercus alba</i> | white oak |
| 4 | | 1 | 3 | | tubeling | QR | <i>Quercus rubra</i> | red oak |
| 2 | | 2 | | | tubeling | SA | <i>Sassafras albidum</i> | sassafras |
| 36 | 0 | 21 | 15 | 0 | | | | |
| SHRUBS/ LIVE STAKES, TUBELINGS & #1 CONTAINERS | | | | | | | | |
| 12 | 2 | | 10 | | tubeling | AA | <i>Aronia (Photinia) arbutifolia</i> | red chokeberry |
| 30 | | 20 | 10 | | tubeling | AM | <i>Aronia (Photinia) melanocarpa</i> | black chokeberry |
| 70 | 25 | 20 | 25 | | tubeling | CA | <i>Clethra alnifolia</i> | sweet pepperbush |
| 15 | 5 | 5 | 5 | | #1 | CEA | <i>Ceanothus americanus</i> | New Jersey tea |
| 10 | | | | 10 | live stake | CO | <i>Cephalanthus occidentalis</i> | buttonbush |
| 15 | | 10 | 5 | | tubeling | CP | <i>Comptonia peregrina</i> | sweet fern |
| 15 | | 10 | 5 | | #1 | CAM | <i>Corylus americana</i> | American filbert |
| 20 | | 10 | 10 | | #1 | GB | <i>Gaylussacia baccata</i> | huckleberry |
| 15 | | 10 | 5 | | tubeling | HV | <i>Hamamelis virginiana</i> | witch hazel |
| 25 | 10 | 10 | 5 | | tubeling | IV | <i>Ilex verticillata</i> | winterberry |
| 25 | | 20 | 5 | | tubeling | LB | <i>Lindera benzoin</i> | spicebush |
| 5 | | 5 | | | tubeling | MP | <i>Morella pensylvanica</i> | bayberry |
| 10 | | 5 | 5 | | #1 | RPR | <i>Rhododendron prinophyllum</i> | early azalea, rosheshell |
| 20 | | 10 | 10 | | tubeling | RCO | <i>Rhus copallinum</i> | winged sumac, flameleaf |
| 15 | | 10 | 5 | | tubeling | RT | <i>Rhus typhina</i> | staghorn sumac |
| 20 | | 10 | 10 | | #1 | RF | <i>Rubus flagellaris</i> | northern dewberry |
| 10 | | | | 10 | live stake | SD | <i>Salix discolor</i> | pussy willow |
| 10 | | 5 | 5 | | live stake | SC | <i>Sambucus canadensis (nigra)</i> | elderberry |
| 63 | 33 | 5 | 25 | | tubeling | SLB | <i>Spiraea alba var. latifolia</i> | meadowsweet |
| 75 | 30 | 20 | 25 | | tubeling | ST | <i>Spiraea tomentosa</i> | steeplesbush |
| 50 | | 5 | 5 | 40 | #1 | SAL | <i>Swida (Cornus) alternifolia</i> | pagoda dogwood |
| 55 | 10 | 10 | 25 | 10 | tubeling | SRA | <i>Swida racemosa</i> | gray dogwood |
| 20 | 5 | 10 | 5 | | tubeling | VC | <i>Vaccinium corymbosum</i> | highbush blueberry |
| 15 | | 10 | 5 | | live stake | VD | <i>Viburnum dentatum</i> | northern arrowwood |
| 25 | | 10 | 5 | 10 | live stake | VL | <i>Viburnum lentago</i> | nannyberry |
| 645 | 120 | 230 | 215 | 80 | | | | |
| HERBACEOUS/ PLUGS (FOOTPATH RESTORATION) | | | | | | | | |
| 225 | 75 | 100 | 50 | | 2" plug | aru | <i>Actaea rubra</i> | red baneberry |
| 250 | 100 | 100 | 50 | | 2" plug | av | <i>Andropogon virginicus</i> | broomsedge |
| 225 | 75 | 100 | 50 | | 2" plug | aca | <i>Anemone canadensis</i> | Canada anemone |
| 335 | 185 | 100 | 50 | | 2" plug | aq | <i>Aquilegia canadensis</i> | columbine |
| 200 | 50 | 100 | 50 | | 2" plug | an | <i>Aralia nudicaulis</i> | wild sarsaparilla |
| 100 | 50 | 50 | | | 2" plug | ar | <i>Aralia racemosa</i> | spikenard |
| 85 | 60 | | | 25 | 2" plug | bt | <i>Baptisia tritoria</i> | yellow wild indigo |
| 320 | 20 | 100 | 200 | | 2" plug | cpe | <i>Carex pensylvanica</i> | Pennsylvania sedge |
| 445 | 120 | 100 | 200 | 25 | 2" plug | dp | <i>Dennstaedtia punctilobula</i> | hay-scented fern |
| 150 | 50 | 100 | | | 2" plug | dc | <i>Desmodium canadense</i> | Canadian tick trefoil |
| 50 | | 50 | | | 2" plug | di | <i>Dryopteris intermedia</i> | intermediate woodfern |
| 50 | | 50 | | | 2" plug | dm | <i>Dryopteris marginalis</i> | marginal woodfern |
| 450 | 50 | 200 | 200 | | 2" plug | ed | <i>Eurybia (Aster) divaricata</i> | white wood aster |
| 210 | 10 | 100 | 100 | | 2" plug | gm | <i>Geranium maculatum</i> | wild geranium |
| 50 | | 50 | | | 2" plug | mc | <i>Maianthemum canadense</i> | Canada mayflower |
| 100 | 100 | | | | 2" plug | pv | <i>Panicum virgatum</i> | switchgrass |
| 70 | 50 | | | 20 | 2" plug | pm | <i>Pycnanthemum muticum</i> | short-toothed mtn-mint |
| 220 | 70 | 100 | | 50 | 2" plug | ss | <i>Schizachyrium scoparium</i> | little bluestem |
| 250 | 50 | 100 | 100 | | 2" plug | sb | <i>Solidago bicolor</i> | white goldenrod, silverrod |
| 50 | | 50 | | | 2" plug | sr | <i>Smilacina racemosa</i> | false Solomon's seal |
| 50 | 50 | | | | 2" plug | sco | <i>Symphotrichum cordifolium</i> | blue heart-leaf aster |
| 260 | 110 | 100 | | 50 | 2" plug | sla | <i>Symphotrichum laeve</i> | smooth aster |
| 320 | 20 | 200 | 100 | | 2" plug | tc | <i>Tiarella cordifolia</i> | foamflower |
| 135 | 10 | 50 | 50 | 25 | 2" plug | to | <i>Tradescantia ohiensis</i> | smooth spiderwort |
| 100 | 100 | | | | 2" plug | vh | <i>Verbena hastata</i> | blue vervain |
| 100 | | 50 | 50 | | 2" plug | vla | <i>Viola labradorica</i> | American dog-violet |
| 325 | 200 | 50 | 50 | 25 | 2" plug | za | <i>Zizia aurea</i> | golden alexanders |
| 5125 | 1605 | 2000 | 1300 | 220 | | | | |
| HERBACEOUS/ PLUGS (BWW, FASCINES, BIOBASINS) | | | | | | | | |
| 230 | 155 | 25 | 50 | | 2" plug | aca | <i>Anemone canadensis</i> | Canada anemone |
| 160 | | 110 | | 50 | 2" plug | at | <i>Asclepias tuberosa</i> | butterfly weed |
| 180 | 80 | 50 | 50 | | 2" plug | cc | <i>Carex comosa</i> | bearded sedge |
| 185 | 85 | 50 | 50 | | 2" plug | cl | <i>Carex lupulina</i> | hop sedge |
| 350 | 100 | 100 | 150 | | 2" plug | cs | <i>Carex scoparia</i> | broom sedge |
| 175 | 50 | 50 | 50 | 25 | 2" plug | cst | <i>Carex strigosus</i> | straw-colored flatsedge |
| 225 | 125 | 25 | 50 | 25 | 2" plug | cv | <i>Carex vulpinoidea</i> | fox sedge |
| 75 | | 50 | | 25 | 2" plug | ep | <i>Echinacea purpurea</i> | purple cone flower |
| 300 | | 200 | | 100 | 2" plug | jc | <i>Juncus canadensis</i> | Canada rush |
| 75 | | 50 | | 25 | 2" plug | ls | <i>Liatis spicata</i> | gayfeather |
| 240 | 140 | 50 | 50 | | 2" plug | lc | <i>Lobelia cardinalis</i> | cardinal flower |
| 25 | 25 | | | | 2" plug | lp | <i>Ludwigia palustris</i> | water primrose |
| 350 | 150 | 50 | 100 | 50 | 2" plug | os | <i>Onoclea sensibilis</i> | sensitive fern |
| 150 | | 100 | | 50 | 2" plug | pv | <i>Panicum virgatum</i> | switchgrass |
| 160 | | 110 | | 50 | 2" plug | rt | <i>Rudbeckia fulgida</i> | black-eyed Susan |
| 160 | | 110 | | 50 | 2" plug | ss | <i>Schizachyrium scoparium</i> | little bluestem |
| 280 | 130 | 50 | 50 | 50 | 2" plug | sna | <i>Symphotrichum nova-angliae</i> | New England aster |
| 245 | 145 | 50 | 50 | | 2" plug | vh | <i>Verbena hastata</i> | blue vervain |
| 3565 | 1185 | 1230 | 650 | 500 | | | | |
| AREA TOTALS | | | | | | | | |
| TOTAL QTY | Area 1 Spy Pond | Area 2 Scannell Field | Area 3 Boys & Girls Club | Area 4 Spring Valley | | | | |
| 9371 | 2910 | 3481 | 2180 | 800 | | | | |

7

PLANT SCHEDULE

SCALE: NTS

5

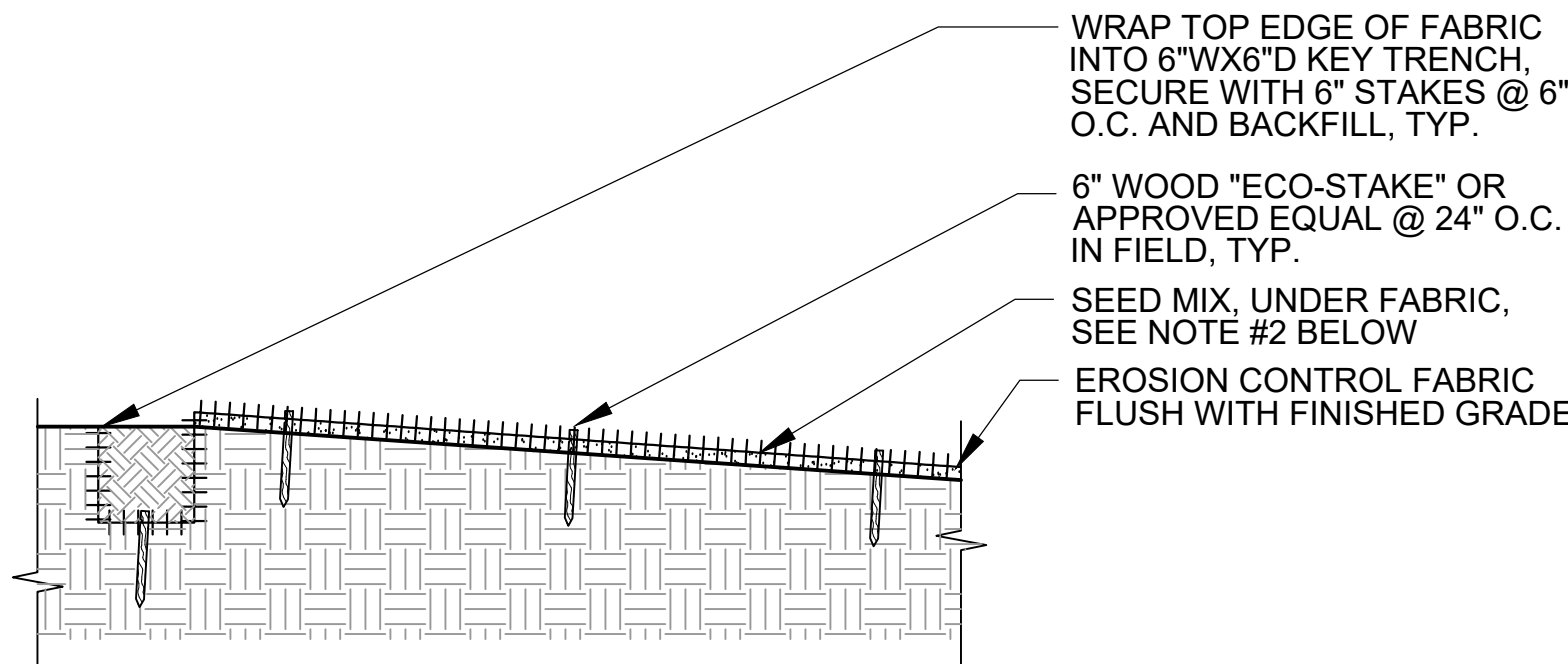
TREE PLANTING (2' HT)

SCALE: NTS

1

TREE PLANTING (TUBELING)

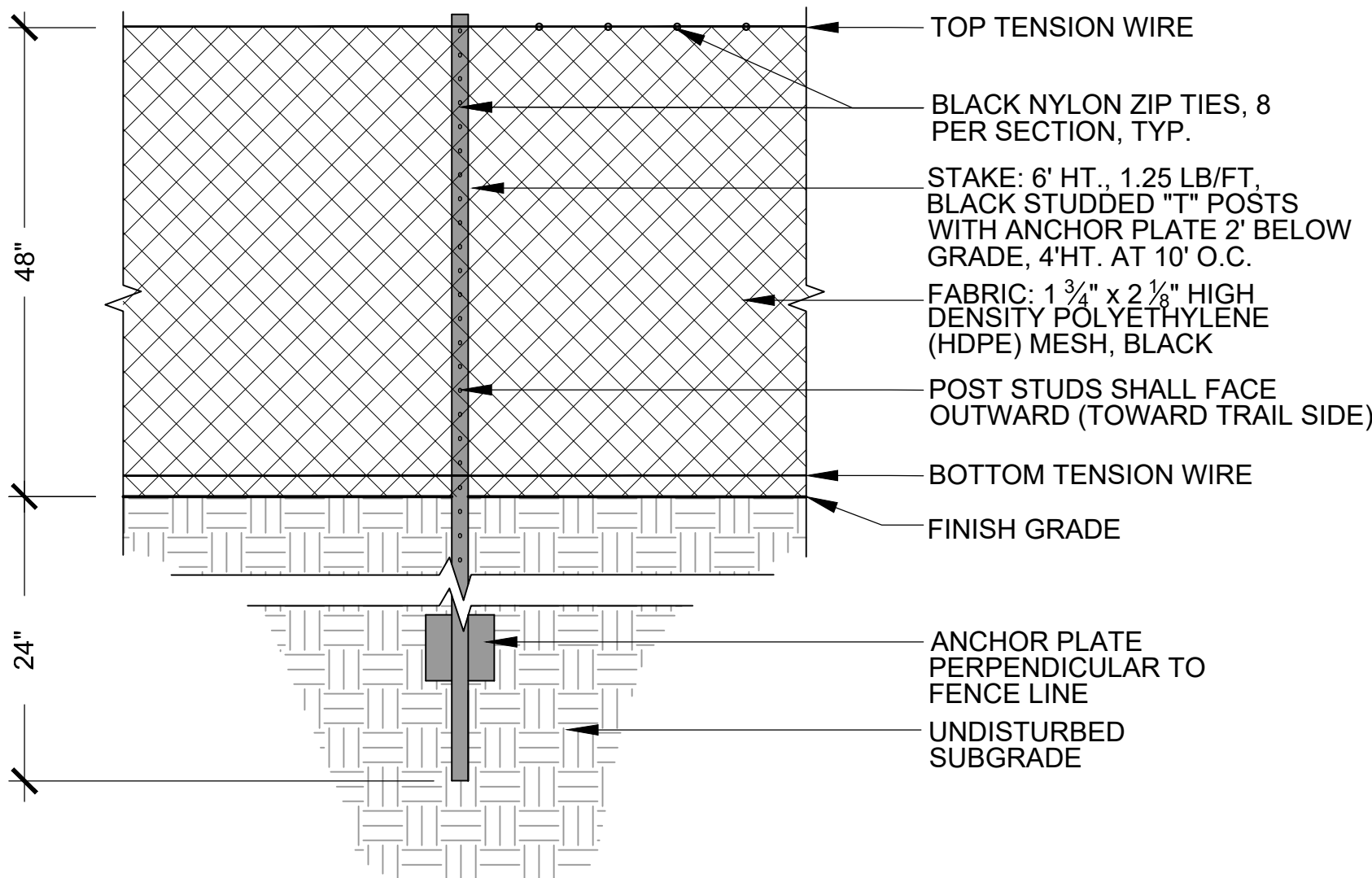
SCALE: NTS



7

EROSION CONTROL FABRIC

SCALE: NTS

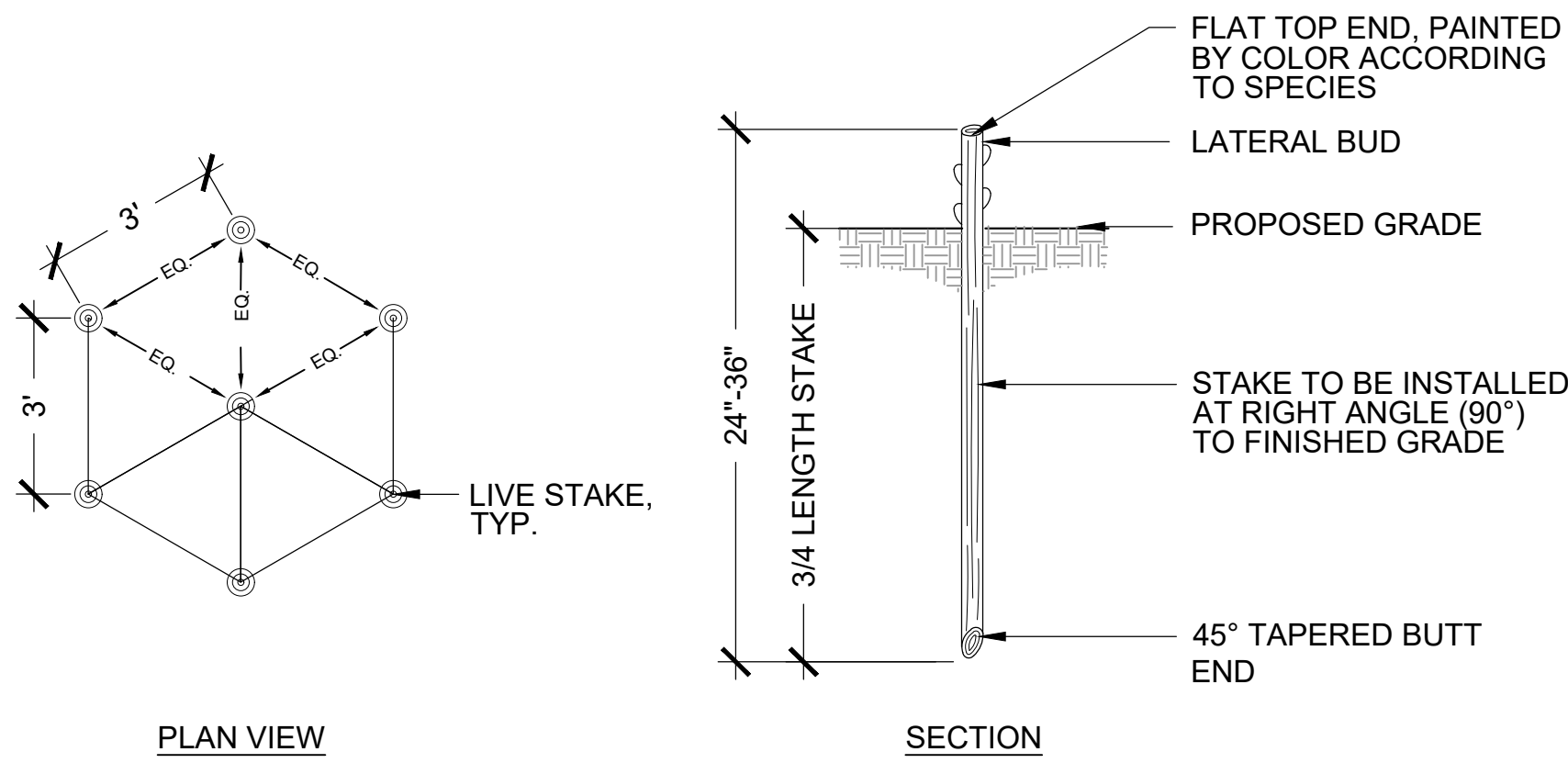
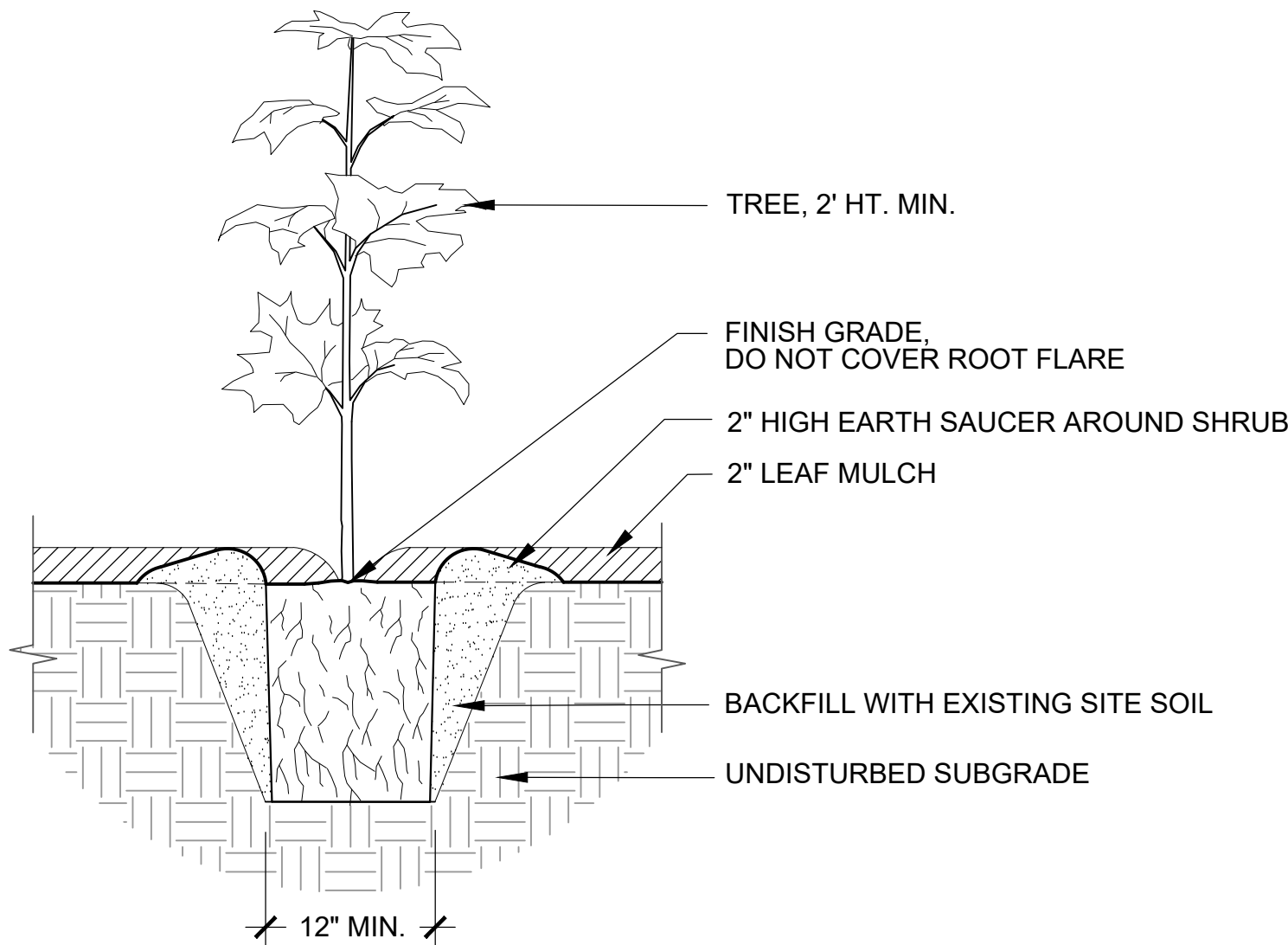


- NOTE:
- AT CHANGES IN DIRECTION, FENCE SHALL BE GENTLE CURVE, NOT EXCEEDING A RADIUS OF 170.

6

PLANT ESTABLISHMENT FENCE

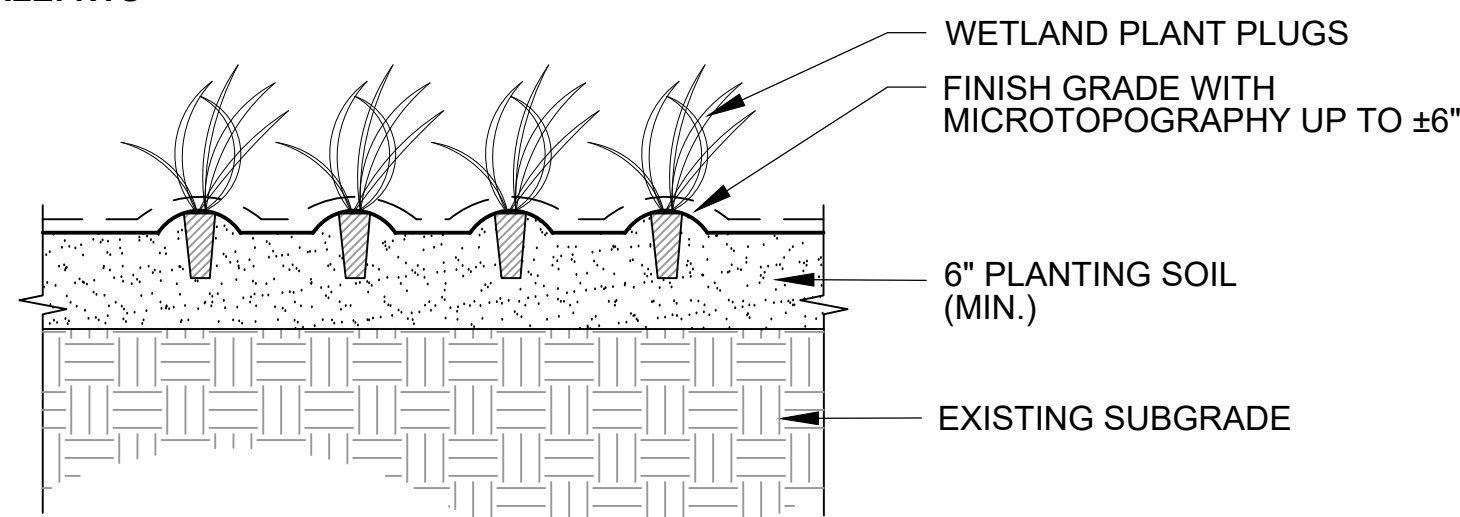
SCALE: NTS



4

LIVE STAKE PLANTING

SCALE: NTS

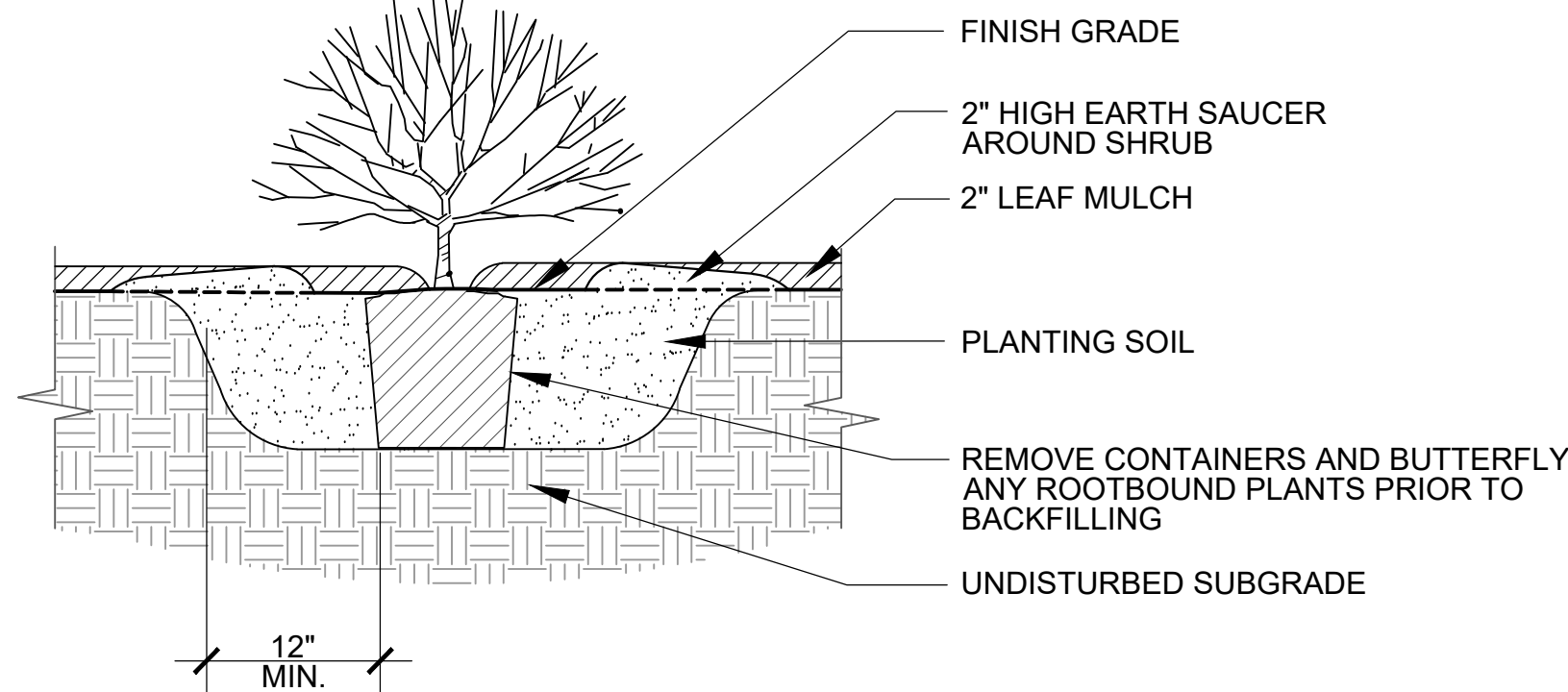


- NOTES:
- EROSION CONTROL FABRIC TO BE INSTALLED PRIOR TO PLANTING.
 - CUT "X" PATTERN IN EROSION CONTROL FABRIC 4"X4" TO ALLOW FOR PLUG PLANTING.
 - SEE PLANT SCHEDULE FOR PLUG SPACING.

3

PLUG PLANTING

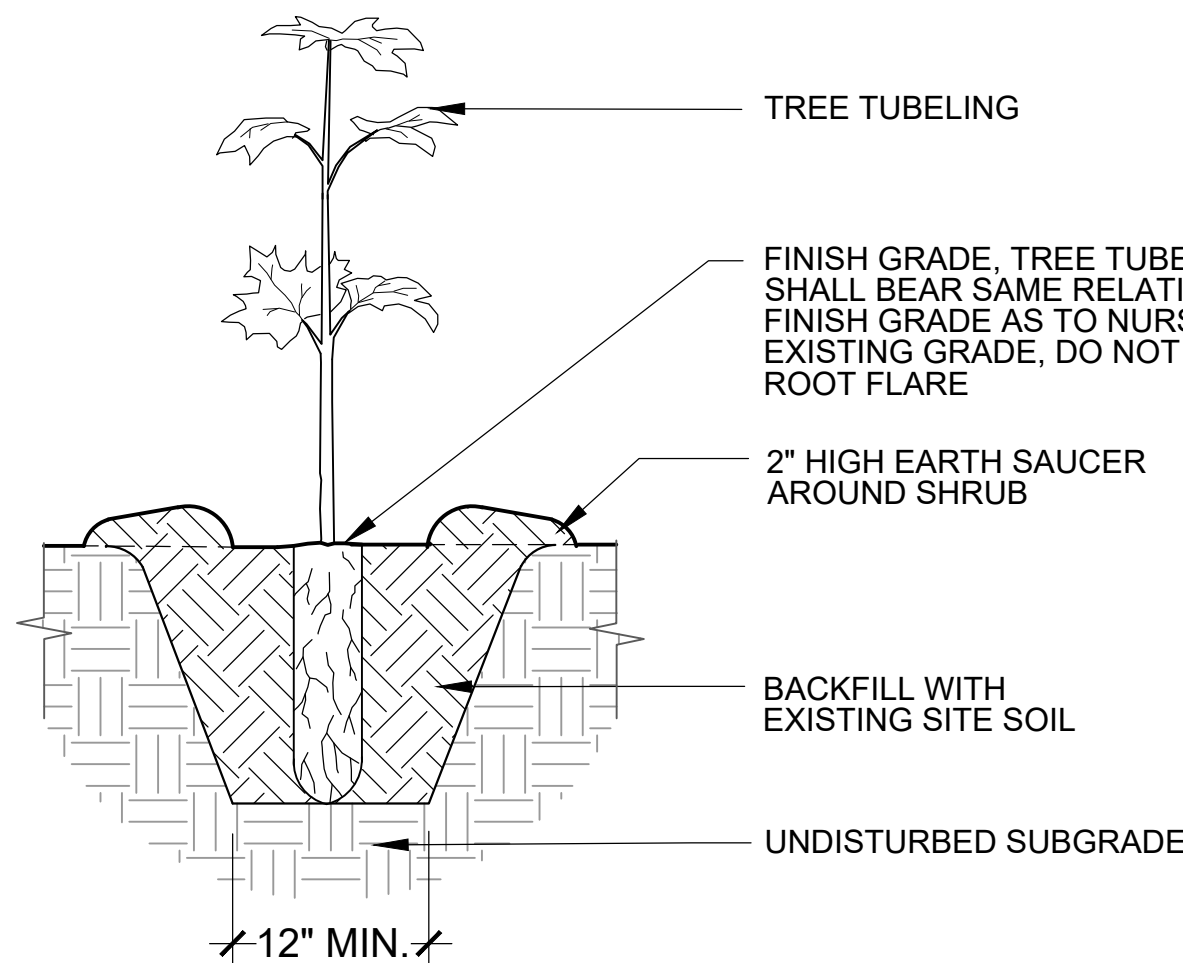
SCALE: NTS



2

SHRUB PLANTING

SCALE: NTS



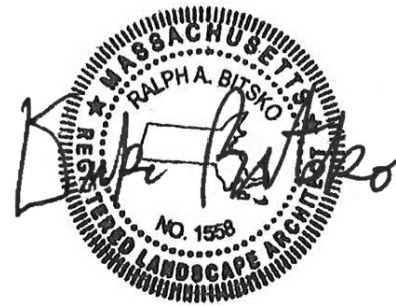
HATCH

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tel. 978-740-0096 www.hatch.com

Client/Owner:

Town of Arlington Park & Recreation Commission
422 Summer St.
Arlington, MA 02474

Stamp:



SPY POND
EDGE & EROSION CONTROL PROJECT
ARLINGTON, MA
NOTICE OF INTENT SUBMITTAL

Project:

Job Number:

H-355321

Date:

July 18, 2018

Drawn By:

A. Keel

Designed By:

H. Holmes, G. Johnson

Reviewed By:

H. Holmes, D. Bitsko

Revisions

Number:

Description:

Date:

Sheet Title:

SITE DETAILS

Sheet No:

L-8